

American **FORESTS**

The Magazine of Forests, Soil, Water, Wildlife, and Outdoor Recreation

JULY 1961

50 CENTS



Our National Forests

LANDS OF MANY USES

Page 10



Great New Saws

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How Much Do You Radiate?

Scientists at Los Alamos, the atomic energy plant in New Mexico, will select one AFA member from each state for a "radiation" test when the association meets at Santa Fe Oct. 1-4. Check will give scientists a state-by-state radiation score for comparative purposes.

American FORESTS

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The American Forestry Association, publishers of American Forests, is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

James B. Craig
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COVER

The art work on this month's cover is the work of Lou Nolan, well-known Washington poster artist and was based on a design by Rudolph Wendelin, Arts and Graphics, U.S. Department of Agriculture. This art work comprised the base for the finished poster shown on page 8 that will spearhead the new program of the Forest Service to explain multiple use to the nation.

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Forest Forum

Solving Practical Problems

EDITOR:

It was with quite some pleasure that I read Mr. Snyder's summary of his wilderness area administrative study in the May issue of *AMERICAN FORESTS*. While radicals bicker back and forth over their personal philosophies there are others — including foresters with the U.S.F.S.—who are putting serious effort into solving the more practical problems of wilderness use—the problems that threaten *all* wilderness, not just segments of it.

It seems a shame to me that people like Mr. Davis ("Forest Forum," May, 1961) come out with unfounded statements regarding the Forest Service and the fact that it "will" get around to building roads into wilderness areas, when it is this very same group that is putting so much time and work into solving the problems of wilderness so these areas can *retain* their value as wilderness.

In regard to Mr. Davis' statement that the wilderness status could be removed "... when it might become profitable for someone to exploit such an area and the pressures become too great," I would say that most of the foresters I know, including U.S.F.S. personnel, would be right in there yelling with him. Certain far-sighted persons saw that this very problem—cutting timber without regard for the land and its other values—would lead the United States right to the hangman's noose; and so the forestry profession was born. Foresters, by the very nature of their training, cannot be expected to become overly emotional about any land problem. They have learned and been taught, oftentimes the hard way, that lack of study and lack of adequate knowledge about a problem can have fatal effects. This does not by any means imply that they have less interest in wilderness preservation.

When the problems Mr. Snyder mentions in his article become serious enough, we will find that all of us will *have* to be on the same team if we want to save any wilderness. We might as well start getting together right now for nothing would be sadder, in my mind, than to see wilderness destroyed by those of us who want and use it.

Hans M. Gregersen
5235 17th Ave., N.E.
Seattle 5, Washington

Memorable Story

EDITOR:

I have just read Mr. Inman F. Eldredge's nostalgic article, "Backwoodsmen I Have Known," in the May issue of *AMERICAN FORESTS*. It is, without a doubt, the most memorable story I have ever read in your publication.

Obviously, Mr. Eldredge is a seasoned

forester. But he is something more—he is a splendid writer who has the ability to weave just the right amount of sentimentality, humor, and color into his reminiscences.

I agree with the editorial note accompanying the article. "Backwoodsmen I Have Known" is certainly a "forestry classic."

Howard E. Bennett
Information and
Education Assistant
Georgia Forestry Commission
Box 1077
Macon, Ga.

"Good For You, Bill . . ."

EDITOR:

William Kitchin's article "A Sixteen-Year-Old Looks At Conservation" was tops. Good for you, Bill! Come see our coast before it is spoiled. You would enjoy my cabin on the Big Nestulla River.

Glenn Stanton
Architect
208 S.W. Stark St.
Portland, Oregon

EDITOR:

Congratulations to William Kitchin on a most effective communication of a much-needed perspective toward conservation. I refer to his article in the May, 1961, issue of *AMERICAN FORESTS*. It is gratifying to learn that there is a crusader for the cause who expresses his views to others. Hurrah for him! Keep up the fight!

Mike Krebell
1102 Seymour St.
Keokuk, Iowa

No Panaceas Needed

EDITOR:

In this time of emotionalism and growing pressure it is high time that the numerous misconceptions concerning forestry and its problems were clarified. Professional foresters appreciate the concern and interest that laymen have in forestry problems; however, forestry is a highly complex, technical profession and anyone who has not had professional training in forestry cannot offer intelligent solutions.

I would specifically like to clarify a few misconceptions in the article by Mr. Kitchin. He states, "... our forests are being used tragically. They are being destroyed by forest fires, used up by lumber companies . . . they are being destroyed by man. . . ." This statement is not based on facts. For example, in the year 1952, losses of growing stock and sawtimber in the United States and Coastal Alaska from *natural destructive agencies* amounted to over 92 per cent of the sawtimber growth and 90 per cent of the cut for 1952. (This loss is expressed as growth impact. Growth impact is the

reduction in net growth in addition to volume loss through mortality.) In other words, almost as much timber as was "destroyed" by man was destroyed by natural causes. Fire plays a very small role in this destruction. In the same year the loss from fire amounted to only 15 per cent of the growing stock and 17 per cent of the sawtimber volume, whereas losses from insects and disease amounted to 61 per cent of the growing stock volume and 65 per cent of the sawtimber volume. The above facts are taken from the "Timber Resources Review," U.S. Forest Service, 1952.

Mr. Kitchin then offers a cure to this "tragic" destruction: "This cure lies in LAWS, either state or federal. . . ." I would like to know how government laws, rules, or regulations can eliminate insect and disease destruction, prevent sunscald, blow-down, and lightning strikes, provide needed rain for germination and establishment of seedlings during the critical period of late spring and early summer, prevent undesirable vegetation from encroaching on cut-over and burned lands, provide a good seed year after year not just periodically, make rocky, shallow soils deep and fertile, make trees grow faster or solve any of the myriad of problems that the layman knows nothing about. Forestry problems will be solved by the efforts of professional foresters and not by uninformed proposals of unprofessionals, politicians, government fiat, or any other panacea.

If the problems are to be solved by those who have the knowledge and skill, then co-operation will have to be forthcoming from the public rather than unfounded criticisms and perpetuation of untruths. It certainly would be refreshing if the public made an effort to acquaint itself with some facts before taking pen in hand. I am sure books on forestry can be had from the larger libraries throughout the country if anyone is genuinely interested. There are several books which would be most helpful to the layman. Also The American Forestry Association has an impressive list of books on forestry which members can purchase at a 10 per cent discount.

I shall be happy to correspond with members of the AFA who may have any questions about the problems of the scientific management of forests for the continuous production of goods and services.

Marshall D. Murray
Professional Forester
Box 152
Headquarters, Idaho

Drift Hazard Curbed

EDITOR:

We noted in your March issue the very interesting article by Mr. Edwin A. Mason
(Turn to page 60)

WE'RE GROWING MORE TIMBER IN THE SEABOARD SOUTHEAST

There is no "recession" in the business of growing trees in the Seaboard Southeast, where the forest resources of the region comprise a major asset to the general economy.

Forests of the area are being protected from fire, and other sound forestry practices have become the order of the day. Tree plantings in the past decade run to more than 4 million acres in the six southeastern states served by Seaboard.

The 113 million acres of growing forests in these six states will continue to be a principal source of our nation's wood cellulose supply in the years ahead.

For a quarter century Seaboard's Forestry Division has worked with landowners and various interested agencies for the maximum development of the forest resources of the territory served by the railroad's lines.

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Seaboard Air Line Railroad Company
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Richmond, Virginia



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THROUGH THE HEART OF THE SOUTH

Reading
about

RESOURCES



By MONROE BUSH

Summer Roundup

IT happens once a year, sometimes more often: the books pile up like a great mountain of pleasure and promise. There is nothing for a reviewer to do at this point but brutally restrain himself, and serve up a dozen or more books as *hor d'oeuvres*, when each would be a sufficient meal in itself.

Remember that a "paragraph review" does not necessarily mean the book does not deserve a thousand words. The difficult truth is that there are too many books for the space of a reviewer's column.

Caribbean Seashells, A Guide to the Marine Mollusks of Puerto Rico and other West Indian Islands, Bermuda and the Lower Florida Keys, by Germaine L. Warmke and R. Tucker Abbott. (Livingston Publishing Co., Narberth, Penn., 1961. \$8.95. 346 pp.) Not only a handbook on mollusks and their shells, but a mature introduction to the fascinating hobby of collecting these strange, beautiful products of sub-surface life. The photographs are good, the maps excellent, and the text as practical as sunburn lotion.

My Home in the Zoo, by Gerald Iles. (Doubleday & Co., N.Y., 1960. \$4.50. 240 pp.) Gerald Iles writes about his life in the Belle Vue Zoo, Manchester, England. The result is a delightful and sometimes topsyturvy mixture of animals, people and science. If you like this sort of thing, you will love this book.

A Pictorial Guide to American Gardens, by Louis H. Frohman and Jean Elliot. (Crown Publishers, N.Y., 1960. \$5.95. 368 pp.) The reasonable price for this large book is due to the mixed blessing of practically all illustrations having been limited to mere black-and-white. In a "pictorial guide" we have come to expect something more winsome than drab 4-by-5 plates. The text is

arranged by states, as a sort of travel guide, and seems as much concerned with owners and houses as with gardens. The planning in this case obviously did not justify the work which a compilation of such scope required.

The Earth's Problem Climates, by Glenn T. Trewartha. (University of Wisconsin Press, Madison, 1961. \$7.50. 334 pp.) Here is a brilliant addition to the science of geography, examining the earth's physical "trouble spots" with a thoroughness that serves a hundred separate disciplines, from economics to military tactics. This is a book that I intend to buy for my personal library—and no more than that can a reviewer say!

Yankee Loggers, A Recollection of Woodsmen, Cooks, and River Drivers, by Stewart H. Holbrook. (International Paper Co., N.Y., 1961. 123 pp.) A personal and attractive reminiscence, chiefly interesting to New Englanders who in their own experience have touched at the edges of this last and wonderful world of yesterday's snow-drenched high timber.

Caterpillars, by Dorothy Sterling. Illustrated by Winifred Lobell. (Doubleday & Co., N.Y., 1961. \$2.75. 64 pp.) A beautiful book for children, with all that is required to entertain as well as teach. There is sufficient how-to-do-it here, as well, to involve the young reader in the mysteries of the extraordinarily well-ordered caterpillar world.

The Lightning Book, by Peter E. Viemeister. (Doubleday & Co., N.Y., 1961. \$4.50. 316 pp.) An able "popularization" that brings lightning right into your den, in a matter of speaking. Viemeister can satisfy any reasonable curiosity except one: Why is the entire book in gray ink?

California Spring Wildflowers,

From the Base of the Sierra Nevada and Southern Mountains to the Sea, by Philip A. Munz. (Univ. of Cal. Press, Berkeley and Los Angeles, 1961. \$2.95. 104 pp.) Field guide data arranged according to wildflower colors. The illustrations are good, especially those in color, but the book is a little over-sized for easy carrying.

Your Future in Forestry, by David H. Hanaburgh. (Richard Rosen Press, N.Y., 1961. \$2.95. 160 pp.) An adequate book to orient the undecided student to the opportunities of this vocation. The text is very tedious. In making a career choice, better to know two or three foresters than read a dozen books. Incidentally, AMERICAN FORESTS published one of the liveliest issues on Forestry Careers that has ever seen the light of day and has been widely reprinted as well as circulated to every school in the nation.

Campground Guide, For Tent and Trailer Tourists. 1961-62 Ed. (Published by Campgrounds Unlimited, Blue Rapids, Kansas. \$1.00. 126 pp.) We have reviewed earlier editions of this guide. Unfortunately, it tells you nothing in respect to specific facilities at the many, many areas enumerated here. Useful for general reference in planning a long trip.

Family Camping Directory, 3rd Edition. (Published by Barcam Publishing Co., Inglewood, Calif. \$2.00. 168 pp.) An excellent reference. Requires some study, but the information is here including an oversimplified indication of the facilities and activities available in each camp. Probably the maximum data that should be expected from a national guide.

A Report on Planning, Policy Making & Research Activities—U.S. Dept. of the Interior. (Resources for

the Future, Inc., Wash., D. C., 1961. 50¢. 38 pp.) An earnest, almost heroic effort to give orderly guidance to the efficiency of an organization that may well have grown beyond the reach of efficiency. Faced—perhaps awed—by such a challenge, the large creative talents of Resources for the Future do not seem here to have risen to the occasion. The report suffers from obviousness.

Nature's Year, The Seasons of Cape Cod, by John Hay with woodcuts by David Crose. (Doubleday & Co., N.Y., 1961. \$4.50. 199 pp.) Naturalist and author John Hay brings to his rich subject a well-trained perceptiveness that enables him to sort the significant from the trivial. This is a wise and gentle book. It could scarcely have been done better.

Tree-Sort, The Pocket Tree Computer. (The Sort-Card Co., Box 901, Boulder, Colorado. \$6.00.) No book at all, this remarkable system of tree identification operates on the simplest of principles—yet complicated enough to defy description here. There are 260 cards, well-boxed with attendant apparatus. A great help to the beginner, the best I've seen. One set should belong to every young people's hiking or camping group.

The Bird Watcher's Guide, by Henry Hill Collins, Jr. (Golden Press, N.Y., 1961. \$3.95. 126 pp.) This is a general introduction to the experience of enjoying birds. It is not a field guide. The late Henry Collins describes here, with the assist of beautiful color photographs, what the "bird business" is all about. A useful orientation for the newcomer.

Initial Forest Management in the Tennessee Valley, by Kenneth J. Seigworth and James H. Barton. (Published by Tennessee Valley Authority, Norris, Tenn., 1961. \$1.75. 150 pp.) A well-organized report on the TVA forestry program. The evolution of this first-rate effort is made crystal-clear, and the conclusions should be of assistance to every man who is deeply involved in forest management.

In our review of the second revised edition of **North American Trees** (exclusive of Mexico and Tropical United States), by Richard J. Preston, Jr., appearing in the May issue, we failed to mention the price and the publisher of this book. The Iowa State University Press, Ames, Iowa, is the publisher and the price is \$4.50.

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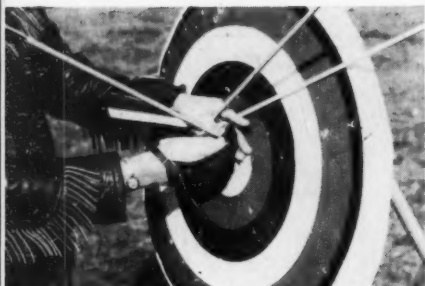
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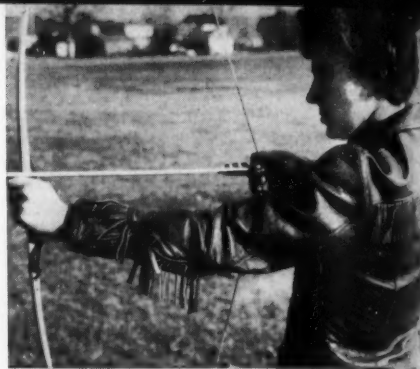




To remove arrow, steady it with left hand, grasp it firmly with the right hand close to target and pull gently



Author demonstrates shooting position, with bow held with left hand and arrow in right



With bow held in upright position, the arrow is held in right hand and slowly pulled back

To nock arrow, lay it across top of bow with cock feather up and fit bow string into slot



Archery Anyone?

THE bow and arrow are listed in the *Encyclopedia Britannica* as the third most important development in the history of mankind. Only speech and the use of fire rank ahead of it. The use of the bow dates back to the stone age.

First it was used as a hunting implement and then as an instrument of fighting. It is only in the past forty years that archery as a sport has gained in popularity and it has continued to rise steadily.

There is a great variety of archery activity—ranging from target shooting, clout, roving, archery golf, and variety shoots, to the actual hunting

By FRANCINE LITT BROWN

of small and large game animals.

Target shooting is by far the most popular form of archery and makes an ideal family sport that can be enjoyed by anyone from six to sixty. Once the equipment is acquired, unlike many other sports, there is no further expense. It is never too taxing and is perfectly safe if the proper precautions are observed.

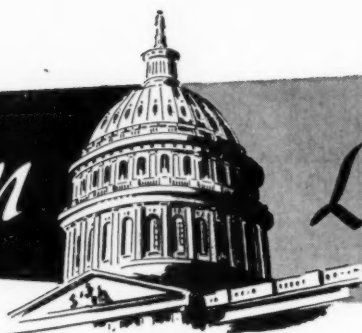
The equipment needed for target archery includes bows, arrows, finger-protectors, quivers, arm-guards, targets, and target faces.

Archery is not a simple game that can be played with no preparation. Form is an important part of archery and so is practice. Both are necessary if you wish to become a good archer.

The first thing to learn is how to string your bow. To do this you hold the bow in your left hand with the arch uppermost and place the bottom end against the inside arch of your left foot. Place the heel of your right hand on the back of the bow so that the loop of the string may be held between the thumb and first finger. By pulling on the handle

(Turn to page 54)

Washington



Lookout

By ALBERT G. HALL

FOREST RESEARCH LOOMS LARGE IN CONGRESSIONAL action on appropriations for the U.S. Forest Service. First, the House added \$4.2 million for research to the budget for the previous fiscal year, but this was \$300,000 less than was requested in the Kennedy budget. (The House denied a request for \$300,000 for detailed design and cost estimates for an addition to the Forest Products Laboratory at Madison, Wis.) The Senate upheld the House deletion of the laboratory item, but added \$4.3 million to the House-passed figure for forest research. As passed by the Senate the forest research appropriation would be \$27,313,000 for the fiscal year ending June 30, 1962 as compared with \$18,778,000 for the present fiscal year. Principal items in the research additions are for the establishment or improvement of research facilities. The AFA states it heartily supports this proposed Senate increase for research.

FOR NATIONAL FOREST MANAGEMENT, THE SENATE brought the House-passed figure from \$118 million to \$149.2 million, \$30 million of which is for increased work on national forests in depressed areas. Also included are \$200,000 for land acquisition under the Weeks Act and \$955,000 for additional protection from fire in California. Once again, the AFA states it commends the acumen of the Senate.

FOR PURCHASE OF ACCESS ROADS, THE SENATE raised both the budget request and the House allowance from \$1 million to \$4 million, "in the firm conviction that the use of these funds will open up vast new areas of marketable timber to sustained-yield use." While the Senate-House figures will probably be adjusted in conference to less than the Senate allowances, it is believed that a major portion of the Senate increases will be sustained. The AFA is for this increase in the belief it is in the public interest.

FOR THE BUREAU OF LAND MANAGEMENT, THE SENATE increased the House allowance for

management of lands and resources by \$2.2 million for a total of \$36.6 million, the additions being for soil and moisture conservation and for management of grazing lands. (For the further enlightenment of members on plans and proposed policies of the BLM see full-dress story on page 20.)

FOR THE BUREAU OF INDIAN AFFAIRS, THE SENATE added \$275,000 to the item for resources management allowance of \$29 million approved by the House, but specified that of the total "not less than \$1,325,644 be used for timber sale administration, with particular attention to be given to harvesting over-mature timber."

AN INVENTORY OF PRESENT AND POTENTIAL REC-

reation areas on the public lands will be completed by the Department of the Interior by July 1. Being made in cooperation with the National Outdoor Recreation Resources Review Commission, it will list all recreation possibilities, including those on lands which may be sold or leased to states or local governments. Under revised regulations, Interior's Bureau of Land Management may sell public lands to the states at \$2.50 an acre or lease them at 25 cents an acre per year if the lands are dedicated by the purchaser or lessee to recreational use for all Americans, without discrimination. The lands must be forever dedicated to public use, or they will revert to the federal government. Other stipulations: no more than a "reasonable charge" may be made for the use of facilities, whether under concession or otherwise, and entrance fees may not exceed those charged at similar state or local recreation areas; state or local governments must agree to develop and manage the lands in accordance with an approved program. States may obtain up to 6,400 acres a year for state parks on not more than three sites. During 1960 through 1962, the acreage limit is temporarily raised to 12,800 acres in not more than six sites for the states, plus additional lands

(Continued on page 58)

Where to Write and Why

As of now 100 copies of the 16 mm film "Wilderness Trail" have been released by the Forest Service and more are contemplated. Trail Riders of the Wilderness and other AFA members who have been inquiring about this film can receive copies for individual showings by writing to the Forest Service, U.S. Department of Agriculture, Washington 25, D.C., or your Regional Office of the Forest Service. With Secretary of Agriculture Freeman predicting that 100 million people will use the national forests, "America's Playgrounds," this year, it becomes increasingly obvious that a stepped-up effort must be made to acquaint the public with the value and many uses of these areas and to see to it that they are protected from fire and kept clean and neat. The new film described by Mr. Frome and a new Forest Service brochure, "Wilderness," also available upon request, represent one step in reaching these goals. For additional information on this new Forest Service campaign, turn to page 10.



WILDERNESS TRAIL

THE performers are strictly non-professional. The principal narrator is a rancher and pack trip outfitter, rather than a mellow-toned announcer. But they all proceed naturally in the most natural of settings and the resulting motion picture, "Wilderness Trail," is bound to delight anyone who has ever experienced, read about or dreamed of adventure on horseback in the western mountains.

"Wilderness Trail" is a new 14½-minute film produced in color by the Forest Service, with the cooperation of The American Forestry Association and the state of Wyoming. It tells the story of one group of Trail Riders of the Wilderness of the AFA journeying through the Wind River Mountains, but it speaks for the unique recreation found in all wilderness areas.

Having participated in this particular trip and then in preparation of the film script, I admit to prejudice. However, more important than

By MICHAEL FROME

words is the grandeur of the scenery and the sense of accompanying the riders on the trail. Audiences will share discovery with those who ride through alpine meadows, dark forests, across the headwaters of the Green River and in sight of snowy starkness above timberline. The crystal-clear waters seen on film almost *feel* cold as some of the women riders venture bravely for a swim while the men settle for a little face-splashing at the shore.

Many facets of wilderness enjoyment, history, and creed are represented on film, although the problems in production and shooting are not. Problems? Almost all the footage of the trail ride itself was made by Clint Davis, Director of Information and Education of the Forest Service, an able cameraman, who had first to ride ahead of the group, set up his equipment, photograph the

riders as they arrived at a particular point and then catch up with them after they went their way. This continued for almost a dozen days in a row. Even when there were layover days on the trail, Clint had to set up his camera and rally his players for fishing, cooking, and campfire scenes.

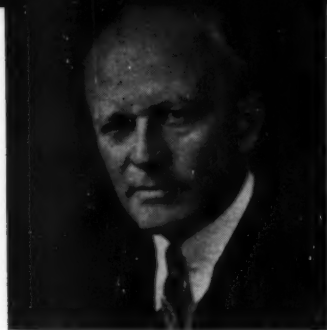
He could not possibly get everything in so short a time. One gap we had to fill was a sweeping view of the Wind River Range, the backbone of the Continental Divide for 100 miles, with a mass of peaks just under 14,000 feet, all within Bridger National Forest. For this sequence, the Forest Service later sent a photographer for an aerial view—providing an unusual perspective not of mid-July, but of mid-January. As our narrator, Walt Lozier, head man of the Box R Ranch and leader of the trail ride, comments on the scene, "I wish the riders could come out and see the range in winter. Could

(Turn to page 46)

Editorial

Tom Wallace

By HARLEAN JAMES



ON June 9, Tom Wallace, editor emeritus of *The Louisville Times*, died at his home, Prospect, at the age of 87.

He was one of the best known newspaper men of the century. *The New York Times*, in a U.P. article, declared that as "a believer in the editorial crusade, Mr. Wallace conducted two of them during most of his life—the fight for conservation of the nation's natural resources and his long campaign for the betterment of relations between North and South America." We completely endorse that statement.

Professionally he was widely recognized. In 1905, Henry Watterson, famous editor of *The Courier-Journal*, took on young Tom Wallace as an editorial writer and dramatic critic. Later he was promoted to associate editor and in 1925 was transferred to *The Louisville Times* as chief of the editorial staff. He became editor in 1930 and editor emeritus in 1948, though he continued to write editorials, magazine articles and speeches.

Mr. Wallace served a term as president of the American Society of Newspaper Editors and was the first president of the Inter-American Press Association. But his editorship was not merely a profession to him. He was dedicated to the causes he supported and this led him into many citizen organizations. As early as 1929, he was made honorary vice president of The American Forestry Association, was active in the work of the association and like his fellow newspaperman, the late Robert Sawyer, of Bend, Oregon, was a staunch supporter of the national forests. Later he served as president of the National Audubon Society. From 1934 to 1938, he was chairman of the Board of the National Conference on State Parks and from 1944 to 1960 he was a vice president of the American Planning and Civic Association.

Many of his national and international affiliations came about through his effective service in the state of Kentucky. He led the fight to reinstate the state forestry program in Kentucky when it had been discontinued. He headed up an organization which resulted in the creation of Mam-

moth Cave National Park. Perhaps the most spectacular of his fights was the campaign against bitter odds to save Cumberland Falls from annihilation by power development. At the 1930 annual meeting of the American Civic Association he told the story of the victory for Cumberland Falls, when the Kentucky legislature passed bills creating the state park and accepting the proffered gift of 2,000 acres from T. Coleman duPont, former Senator from Delaware and a native of Kentucky. The National Conference on State Parks and the American Civic Association had appeared before the Federal Power Commission in opposition to the power project.

Mr. Wallace was the recipient of many honors. To mention only a few, in 1935 he received the silver Pugsley Medal of the American Scenic and Historic Preservation Society for his service in saving Cumberland Falls. In 1945, he received the Maria Moore Cabot Gold Medal at Columbia University in recognition of his work for the solidarity of North and South America. He received an award from the Woodmen of America in 1953, and the Nash Motors Certificate of Merit in 1955. He was a recipient of the Distinguished Service Award of The American Forestry Association.

In 1910, Tom Wallace married Augusta French of Philadelphia who died in March of this year. They leave a son, Henry French Wallace of Prospect, and a daughter, Mrs. Edward Lyons of New York.

The work of Tom Wallace lives after him. He will not soon be forgotten in his home state or by the many conservationists who worked with him and who greatly admired him. It was my personal privilege to know Tom Wallace over a span of years and I can attest to his effectiveness as a crusader. His was indeed a powerful voice in our conservation movement—one of those gifted and courageous individuals who bob up all too seldom in history—but who, fortunately, seem to appear when most needed. He will be missed but the example he set lives on as an example both for his contemporaries and those who will follow us.



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LANDS OF MANY USES

Secretary of Agriculture Freeman predicts 100 million visits will be chalked up on the national forests this year. Protecting these forests from fire, explaining their various uses, and making these visits a meaningful experience, becomes an increasingly big job. How this job will be expedited is explained here. Its symbol is shown at the right



By JAMES B. CRAIG

THE American people have discovered the national forests within the last decade and the magic of seeking out and exploring our outdoor wonderlands greatly appeals to them. Never before in history has the lure of far-away places—lakes, streams, forests, and mountain fastnesses—been so great as today. Moreover, this spirit of discovery is not merely in the minds of people. It is a dream being realized, for our growing middle class now has both the means and the wherewithal to seek out even our most remote mountain retreats, and is doing so.

According to Secretary of Agriculture Orville L. Freeman, recreation visits to the national forests will exceed 100 million in 1961. The trend continues up, up and up. Visits last year totaled more than 92 million. In a statement released by the Department of Agriculture, Secretary Freeman said he wanted to assure all that Americans are free to use and enjoy the public forests, but he wanted also to ask their help in "protecting forest lands from fire and lowering the cost of administering and maintaining recreation areas."

Not more than one in a thousand visitors misuse facilities and damage signs, picnic tables, and other struc-

tures, the Secretary said. "At the same time, repair and replacement costs are still too high. Lower costs would enable the Forest Service to step up programs for developing new recreation areas and improving others so that still more Americans can enjoy the national forests. The 186 million acres of the National Forest System including the national grasslands are valuable national assets. Under multiple use management these public lands are producing water, timber, forage and wildlife in addition to providing a rec-

reation resource which has made them truly 'America's Playgrounds.' "

More Visitors from Abroad

More difficult to assess is a contemplated effort by our government to lure more foreign visitors to our shores. Personally, we are optimistic. Whether this influx will be a trickle or a torrent immediately remains to be seen, of course. On the pessimistic side, some have said our cooking does not appeal to Europeans, that we have no scenery that compares with the Alps, and that

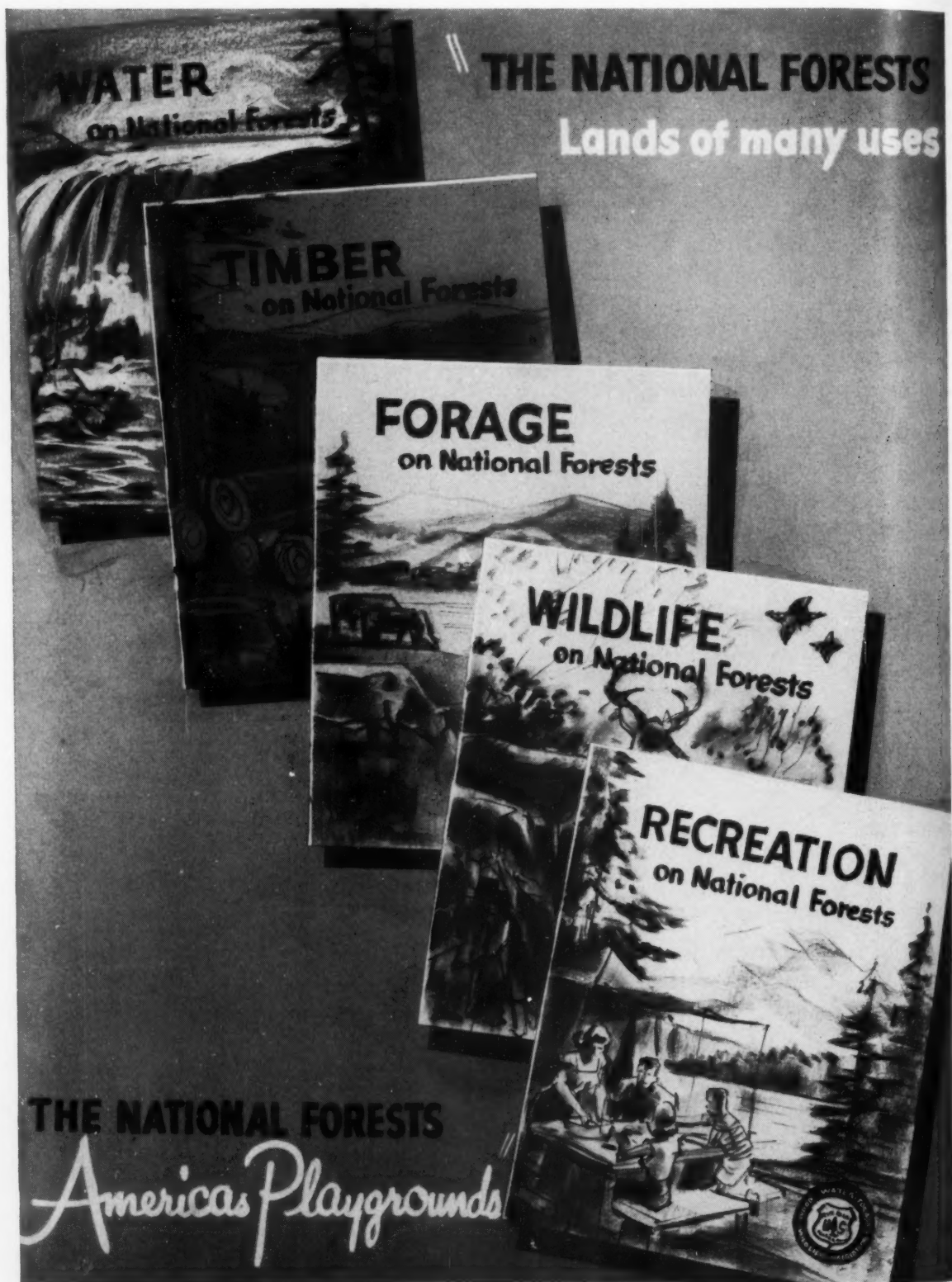
New poster to remind national forest visitors their help is needed in protecting these lands from fire and other damage is viewed by Secretary of Agriculture Orville Freeman (left), Forest Service Chief R. E. McArdle, and Assistant Secretary Welch.



Photo by Leland J. Prater

Forests, water, mountains—that's the Pinchot National Forest in Washington State—a true land of many uses.

In junking the old "kitchen sink" approach of lumping all national forest resources and uses together, the Forest Service now proposes to use a rifle, not a shotgun. Accordingly, individual forest uses will be pinpointed and promoted on their own merits. Brochure on "Wilderness" was first to appear, with others on related subjects scheduled for publication at an early date.



the cost is too great. We differ with these views. When Americans ape European cooking, Europeans get just what they deserve—a poor substitute. But have Europeans ever sampled an American deep-dish apple pie with a flaky crust, Maryland fried chicken or terrapin, or New England baked beans or clam chowder? Or a rainbow trout fried in flour over a wilderness campfire? Or have they ever seen Glacier Peak in the Mt. Baker National Forest or Mt. Fremont in the Bridger Wilderness—spectacles that certainly compare favorably with any Alp? Or have the pessimists heard the lilting lullaby European cash registers are singing these days, thanks in part to Marshall Plan aid? Some of those people have more money than we do. And most assuredly good impressions made abroad by such personable good-will ambassadors as President and Mrs. Kennedy are doing the hospitality cause no harm. We believe that more of our European friends will be coming to visit us in coming years. Some will visit outdoor America.

Whether these guests of the forest come from home or overseas, they will find the welcome mat out for them on the national forests. Located in 39 states and Puerto Rico, the 154 forests comprising 181 million acres present an unmatched variety of choice recreational offerings to the visitor, one or more of which are easily accessible to all. That these forests by virtue of their very size and attractiveness must, by necessity, absorb much of the shock of increased recreational use today seems quite apparent. Absorbed it will be for the Forest Service, which manages the forests for the American people who own them, is determined that the recreational needs of the owners will be met. This means that the national forests more than ever will deserve the title, "America's Playgrounds." This will be a major contribution of these outdoor wonderlands in the important task of helping to keep our people physically fit and mentally alert. On this score, the magic of the forest yields to no other tonic known to man.

Pleased as most of us are by this happy prospect, there are those of us who have also been concerned that other equally essential uses of the national forests might suffer in the process. Let's not kid ourselves, this recreation march is a real avalanche. To cope with it poses an immense challenge to all of us. Not so well known, unfortunately, to many

members of the public at large is the fact that the national forests are lands of many uses in addition to such delightful and healthful outlets as camping, hunting, fishing, swimming, skiing, and picnicking. These forests also provide water for our cities and farms, wood fiber for an ever-expanding array of useful purposes, minerals for a science also outward bound on new conquests and new worlds to conquer, a home for wildlife, and good steaks and chops from grazing cattle and sheep. These uses are essential, too, and they contribute mightily to the strength and stability of America. And while recreation today is recognized as second to nothing on the forests, people who know full well that man

must have bread, as well as not living by it alone, intend to see to it that these more physical needs are met just as surely as are the more spiritual ones.

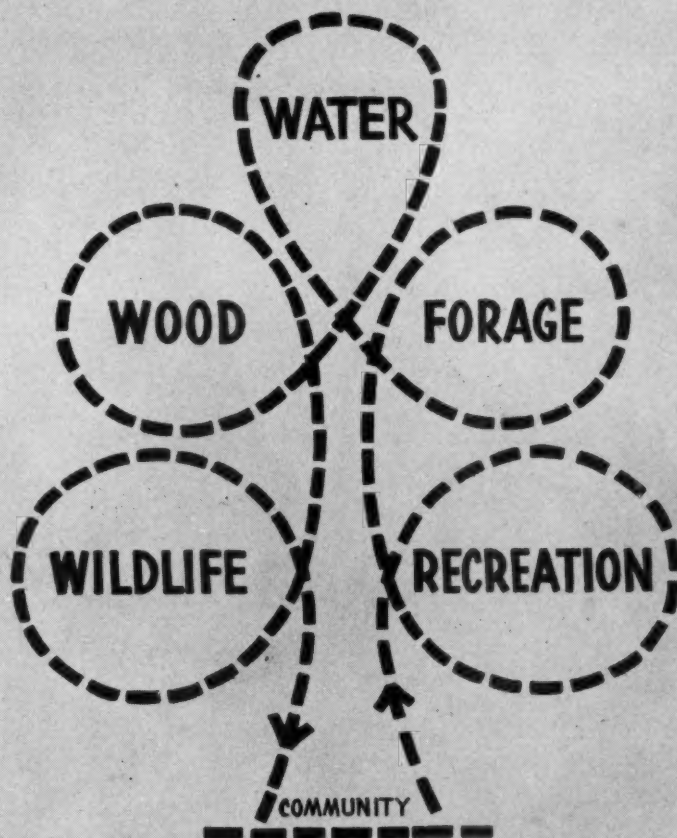
Needs Will Be Met

The Forest Service assures us that all of these needs as they apply to the national forests must and will be met. More recently, and, frankly, to the relief of many of us, the Service is presenting concrete proof on just how it proposes to do this. What they propose rings a bell, in our judgment, and one only wonders why they didn't trigger this action a long time ago.

Senator Carl Hayden, that wise and good friend of the national for-

The Symbol and What It Means—Trunk of multiple use tree stands for the Nation and the people who benefit from national forest resources. Unbroken line links each resource with the other and all five major resources are linked with the public. This establishes interrelationship and interdependence of six elements. Line continuity spells multiple use as it has been, is, and will be practiced on all national forests

NATIONAL FORESTS



MULTIPLE USES

ests, once told AMERICAN FORESTS that seeing is believing so far as the American public is concerned. By this he meant that the people who use and visit the forests also represent their salvation, for what they see there does more to increase their understanding of the uses of these lands than all the books, articles, speeches, and commercials that were ever written. True, but it also becomes increasingly apparent that these Americans should also fully understand what they see.

Recognizing the wisdom of this thought as well as the need for putting it into practice, the Forest Service proposes to launch what may prove to be the most timely educational program in the annals of American conservation. The symbol shown above—the symbolical tree with its equal emphasis on water, wood, forage, wildlife, and recreation—will be the visual charter for this crusade. The administering agency will be a newly-organized Branch of Visitor Information Service. This, in turn, will be divided into a Multiple Use Information Section and a Visitor Programs Sec-

tion. The former is being charged to take the multiple use story to the American people and it proposes to do this with a rifle rather than a blunderbuss. The old "kitchen sink" approach to multiple use is out the window once and for all. In addition to servicing the usual mass communications media, this section proposes to take its messages into the schools, teachers' colleges and universities, and to every community and hamlet in the land. Above all, materials published will pinpoint these various uses, one at a time and in sequence. An excellent brochure on wilderness values already released represents an auspicious start. A big order? Yes. But the Service is going to do it and AFA is going to help.

The second section will field uniformed specialists who will take the forest fire prevention message to national forest visitors and explain to them just what multiple use is and how it works. These men will explain that multiple use is deliberate and carefully planned integration of various forest land uses so that each interferes with the others as little as possible and supplements the others as much as possible. They will ex-

plain that multiple use coordinates the development and use of the renewable resources, calls for sustained yields of those resources at a high level of productivity, and that this can be done and is being done without impairment of the land's ability to produce. They will explain that the multiple use concept of land management is the most scientific, sensible and sane approach to resource management in a truly scientific era—a management tool that serves better than any other form of land management the basic purpose of conservation. That purpose is a *social* purpose embodying the principle of meeting both the tangible and intangible needs of our people. Finally, they will explain that multiple use is wise because it works. We have 181 million acres of national forests in this nation. That is all there is, there isn't any more and students like Dr. R. E. McArdle concur that our forest land base will tend to shrink rather than expand in coming years due to the press of mounting needs, many of them quite legitimate, including the prospective need, after 1975, strange as it may seem in this era of agri-

Viewed in terms of watersheds and seasons of the year and seasonal use as well as acreage and growth zones, national forests are fascinating. Can you pick out all the uses shown here?

SPRING



SUMMER



cultural surpluses, for more agricultural lands. This places a heavy premium on managing those wildland acres we have wisely and well and also providing visitors with a more meaningful experience.

Emphasis on Values, Uses

That, in a nutshell, is the program. This will be a program with everlasting emphasis on VALUES and USES—all the intrinsic values and uses of the forest. And right here AMERICAN FORESTS has a few comments to make: The American people in recent years have been bombarded by the demands and exhortations of special pleaders in conservation who state that the limited, single use goals they profess to serve represent the true conservation gospel. Actually, their pitch is most misleading. The truly great conservation organizations of this nation, and of these The American Forestry Association takes its place at the head of the list, have for decades endeavored to *serve* conservation as a whole and they have tried to *see* conservation as a whole. These more stable, if less vocal, groups serve no single use master and to them conservation means *all* of the resources

blended into harmonious and complementary use patterns that combine idealism with prudence and are based on the art of the possible.

Thus, in the program adopted by our AFA members, recreation, for example, becomes one highly important use of forest land. At the same time, it is just one of many uses, all of which are recognized and all of which have their part to play within the framework of this great bulwark of American civilization we call our national forests. We believe this happy combination of uses as administered by proven professionals represents an impregnable rock that helps assure our economic and spiritual stability. As such, forests serve both America and the entire free world in what is admittedly an hour of crisis for freedom everywhere. Accordingly, let us reject those lobbyists, no matter what their stripe, who would deprive our people of lands that are serving a variety of useful purposes in favor of narrower purposes. Let us join with those who will continue to seek equitable and prudent answers within the national forest framework that are fair and just, both to the people they serve and the lands we use and conserve.

Let the whole public be served and not just one or two fragments of it.

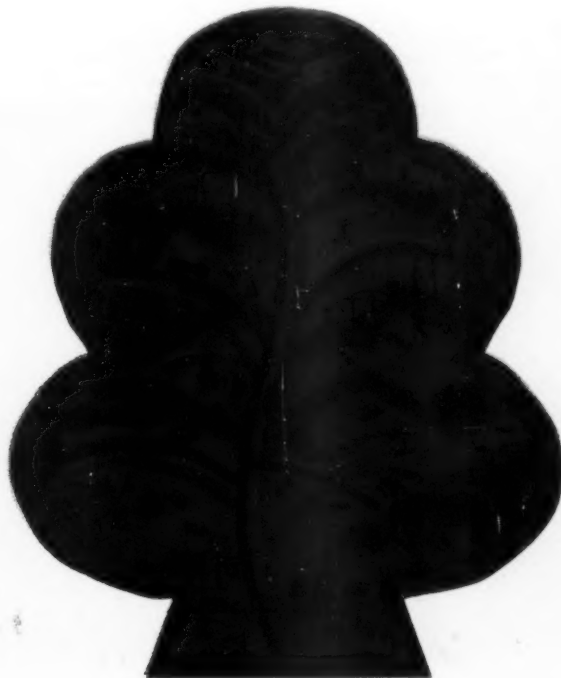
Has the Service continued to grow with the times? Or has it succumbed to bureaucratic immovability, as some have charged? We believe it has grown, that it has remained mobile, and has shown a commendable facility to adjust to changing times. And while in a sense it might be considered contradictory for AFA to say this, we believe it made its greatest advance when it junked the old idea that the forests are a mere timber factory and started managing them for what they really are, living watersheds of a three-dimensional nature, sheer acreage, as many as six life zones, and four seasons—spring, summer, fall, and winter. Examine, for example, the four drawings of a typical national forest watershed on pages 14 and 15. We have 181 million acres in national forest watersheds like this, some of them with all the growth zones in the United States, and all of them with four distinct seasons of the year—and each season with its varying and complementary uses. Picking out those various uses as shown on these charts makes an enjoyable exercise

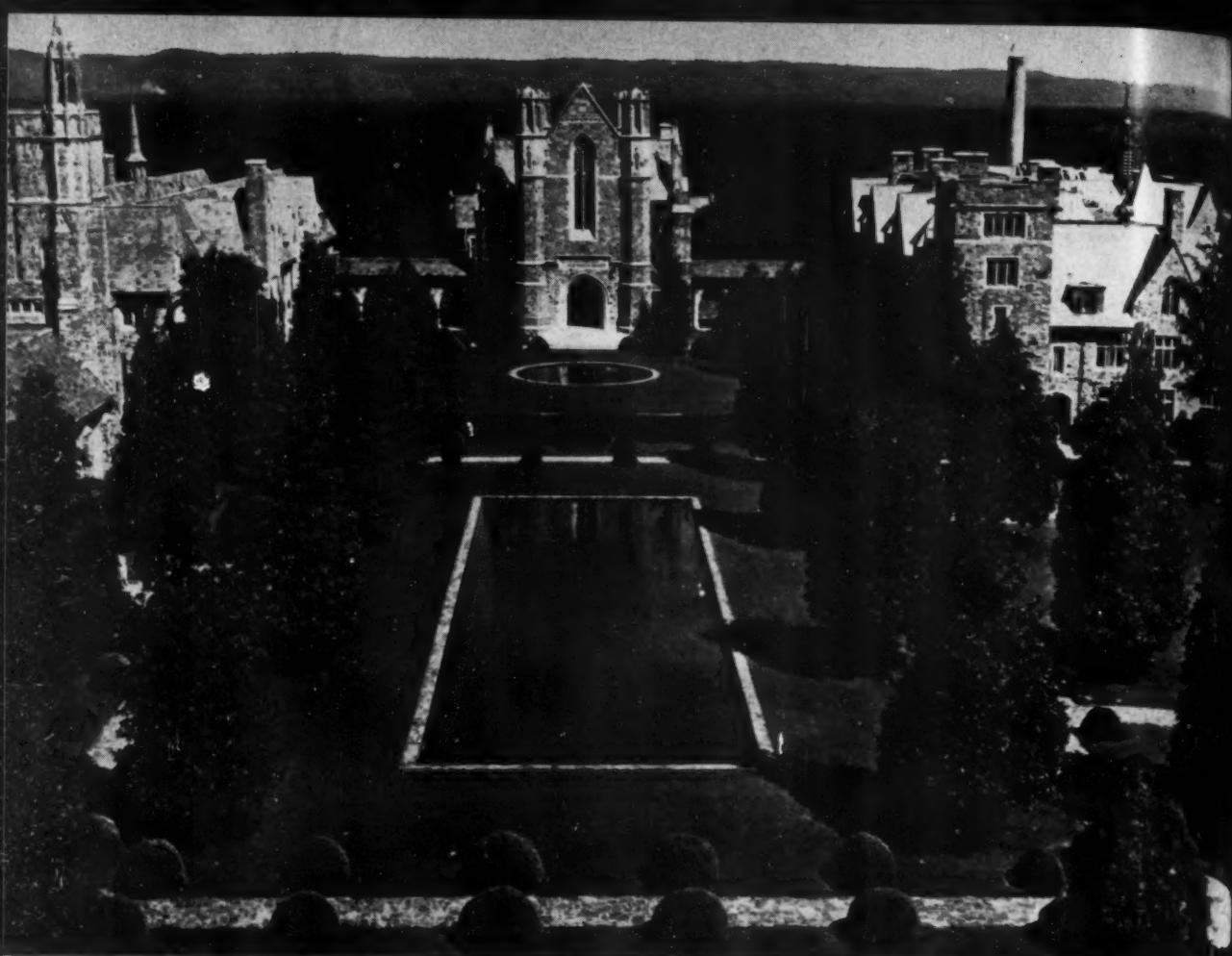
(Turn to page 56)

FALL



WINTER





Part of the Ford Quadrangle of buildings donated to the schools by the late Henry Ford, Detroit industrialist. Students tend the campus grounds, as well as doing other work around the schools, as a part of the schools' student work-experience program

Theodore Roosevelt and Gifford Pinchot, with the school's founder, Miss Martha Berry, taken 50 years ago when these two early conservationists made visit to first school, Mount Berry School for Boys



THE story of conservation during the past half century is strikingly presented on the lands of The Berry Schools near Rome, Ga.

Today a modern soil conservation plan is being carried out in cooperation with the Coosa River Soil Conservation District on the 3,600 acres of cropland and pasture and 25,000 acres of woodland comprised in the schools' 30,000-acre campus.

This modern conservation program is linked to the early history of conservation by an historic occasion in the schools' life. The event has been preserved in visual form by a photograph taken 50 years ago, in October, 1910. The picture shows two of the nation's first conservationists, Theodore Roosevelt and Gifford Pinchot, riding in an ox-drawn wagon with the schools' founder, Miss Martha Berry.

An interesting sidelight on the photograph of the group—and on the character of the institution—is

By BARRINGTON KING

Harvesting hay for schools' 1,800 cattle is big operation. Here, students "gang up" on problem with several modern hay balers.



"To Walk In The Light . . ."

that the team of oxen were driven to the school by Emory D. Alexander from his home in Walker County, Ga., and used as payment for his tuition. Alexander was later graduated from the school and became extension agronomist at the University of Georgia. He served in that capacity until his death in 1953.

The picture was taken during a visit to the school by the two distinguished conservationists to see at first hand the early results of Miss Berry's work. The unusual mode of transportation provided for the visitors symbolized the humble beginnings of the institution. The schools were the outgrowth of a Sunday school class for underprivileged children of the surrounding area that Miss Berry started in a log cabin on her father's land.

The interest the young people took in the *Bible* stories she told them on Sunday afternoons and their hunger for knowledge inspired

Miss Berry to expand her efforts. She envisioned a school where deserving young people could get broad educational advantages under Christian leadership largely through their own productive efforts in agricultural and related work on school lands.

From the schools' founding in 1902, the history of the unique educational institution is an oft-told tale. It has been the subject of many articles in national magazines. Books have been written about its distinguished founder.

The name of the institution was changed in 1917 to The Berry Schools, which today includes both the original Mount Berry School for Boys and the four-year co-educational Berry College. Miss Berry directed the schools' program until her death in 1942.

During her lifetime, she received many honors. In 1925, President Calvin Coolidge, in presenting her

with the Roosevelt Medal, said, "Because of you, thousands have been released from the bondage of ignorance, and countless other thousands in generations to come will walk not in darkness but in light."

In a nationwide poll conducted in 1932, she was chosen as one of the 12 greatest American women. She was given the \$5,000 Pictorial Review Award in 1932, and in 1940, she received a \$1,000 plaque from the Variety Clubs of America for the most outstanding humanitarian service of the year.

But the conservation phase of the schools' history has not been generally publicized. At the time of Roosevelt's and Pinchot's visit, conservation was more of an ideal than a science. They were vigorous advocates of both human and resource conservation. And they saw in Miss Berry's dedicated efforts an admirable combination of the two objectives.

Her conception of a full life for

the students was closely linked to the land. And she seemed instinctively to know that the basic principle of resource conservation was proper land use and treatment. As the schools acquired an ever-increasing acreage of worn-out farm lands, the steep, eroded areas were left to grow up in pine trees.

The planting of nursery-grown pine seedlings, a widespread practice throughout the South today, was virtually unheard of at that time. But native loblolly pines quickly took over the eroded areas when the steep land was no longer plowed for cotton. On the areas better adapted

to row crops, conventional farming operations carried out by the students largely provided for the expenses of their education.

As has been the case throughout the schools' history, much of the work is done by the students. Each student must work 16 hours a week. If a student qualifies and wishes to work full time during the summer, he can earn money toward his expenses for the next school year. In addition to other campus industries, the boys plant and harvest the field crops, work in the dairy and feed mill, tend the beef cattle and hogs, and work in the woodlands. The girls

do secretarial jobs, work in the cannery, kitchen, dining room, and laundry.

In the early days, cotton was grown along with other row crops. But gradually the farming system shifted and more land was put in pasture and hay. Fruits, vegetables, and other food crops are grown for school use and for sale. The schools have their own modern feed mill for mixing feed. The only row crop grown today is corn for feed grain and silage.

In 1940, as this trend toward a more extensive system of agriculture progressed, the schools called on the Coosa River Soil Conservation District for assistance in developing a conservation plan for their lands. Actually, six separate plans were developed for the Dairy Farm, College Farm, Mountain Farm, and River Farm, including the woodland area in each.

Soil Conservation Service specialists working through the local district, assisted in the conservation planning. They included Southeastern specialists from Spartanburg, S. C., and C. L. Veach and Mark King from the Georgia SCS personnel. During the past 20 years, Dan Norton, veteran SCS work unit conservationist at Rome, has maintained close contact with the schools in the application of the planned program.

Norton is always on call when technical assistance is needed on any soil conservation problem. When an old straight-row peach orchard became so badly eroded that it went out of production, Norton laid out a modern contour-planted and terraced orchard, with grass waterways to handle runoff. The new orchard, now 12 years old, includes 26 varieties of peaches, ripening from the last of May through August.

The woodland conservation part of the plan was developed with the technical assistance of D. L. Lauderburn, former SCS forester in the office for the Southeastern area at Spartanburg. Under this part of the conservation plan, selective cutting operations were begun on the 25,000 acres of timberland acquired during the past 50 years or more, to put the woodland on a sustained-yield basis.

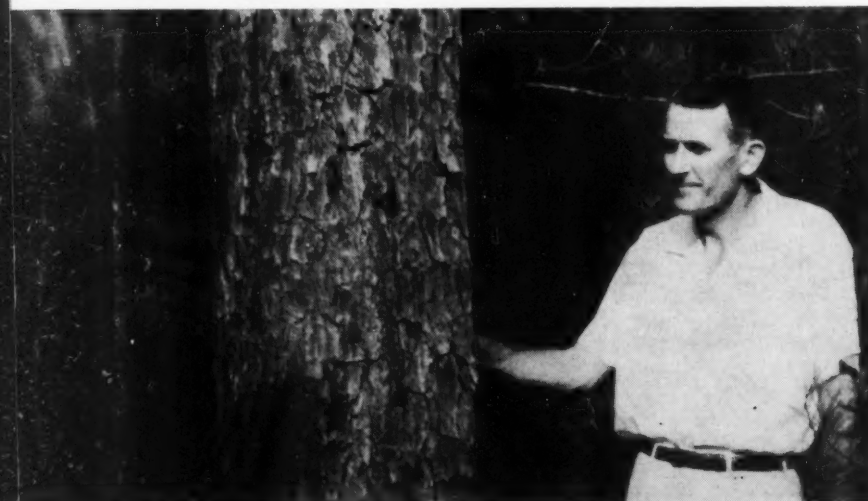
Dr. T. R. Moyer is director of agricultural and forest resources. Farm Manager Joe Stone, Associate Professor of Agriculture, has charge of the farm operations. W. S. Black supervises the extensive woodland phases of the program.

As school forester, Mr. Black carries out harvesting and improvement



Farm Manager Joe Stone and Dan Norton, SCS technician at Rome, examine sod of Coastal Bermuda grass which has recently been mowed by students

School forester W. S. Black stands by a mature pine, ready for harvest cutting. In background can be seen young new growth of pine coming in



cuttings on 2,500 acres a year, which provides a 10-year cutting cycle for the 25,000 acres of woodland. The estimated growth rate is $3\frac{1}{2}$ million board feet a year. Mr. Black has a goal of 3 million board feet a year for harvest and improvement cuttings.

The school forest produces high quality timber. The lumber, sawed in the schools' sawmills, provides building material for the schools and brings a premium price on the market. Thus the old eroded farm land, which Miss Berry acquired over the years and allowed to grow up in pine trees, has developed into a valuable source of endowment income through sound woodland conservation methods.

The present system of farm management has been highly successful in producing improved yields and adequate stocking, Mr. Black reports. It promotes regulated distribution of even-aged stands of trees throughout the forest. The system of management by area control is expected to increase the total annual harvest.

Berry College has recently organized and sponsored special one-day programs for forest owners. Two programs were held during 1959, the second attended by 35 persons interested in woodland development. Plans are underway to continue this program for foresters and farmers as an annual activity.

The college has always been vitally interested in student agricultural groups. Several 4-H and FFA contests are held on the campus. The college is developing additional plans for serving as host to groups of this type to encourage interest in the soil by future farmers and agricultural leaders.

The institution has strongly supported from its inception the area development program of the Coosa Valley Planning and Development Association. The association's organizational meeting was held at the Berry College in 1959, and the first annual meeting was held there in July, 1960.

Dr. John R. Bertrand, who has been president of Berry College and Mount Berry School for Boys since 1956, has a strong interest in the agricultural and forestry programs. He is a former dean of the University of Nevada College of Agriculture and of the Nevada Agricultural Extension Service. He also served on the state Soil Conservation Advisory Committee. Before going to Nevada

he was assistant dean of agriculture for Texas A. and M. College.

"We are vitally interested," President Bertrand says, "in the many facets of agriculture and forestry today—the educational opportunities in our courses and work experience for students and, through our workshops and field days, for foresters and farmers; development and conservation in the interest of effective management and the future; and production, which through careful management and planning, helps provide some of the funds needed for the college and school for boys."

In addition to the assistance from SCS technicians through the local district in developing the overall farm conservation plan, other agencies have provided specialized aid. The Georgia Forestry Commission has given help in woodland work. ACP payments have been provided by the Agricultural Stabilization and Conservation Committee for carrying out various permanent conservation practices.

Beginning about 1948, the schools got special help from the University of Georgia's College of Agriculture, Georgia Experiment Station, and the TVA in pasture improvement. The TVA provided half of the nitrate and superphosphate fertilizers used in the pasture improvement program.

Among the specialists who took part in this project was the late Emory D. Alexander, extension agronomist, who appeared as a student in the picture with the team of oxen at the time of the Roosevelt and Pinchot visit in 1910. Also participating were Dr. Glenn W. Burton, geneticist of the Georgia Coastal Plain Experiment Station at Tifton, who developed coastal Bermuda grass and other plants widely used throughout the South; Dr. O. E. Sell, pasture specialist; Dr. Fred Saunders, of the College of Agriculture; Edd Parker, from the Experiment Station at Griffin, Ga., and John Miller of TVA.

As a part of the conservation program, long time sod-based rotations are carried out on pasture and hay lands. Corn is planted at intervals of three to five years in the rotations with sod crops, which include orchard grass, coastal Bermuda grass, fescue, and ladino clover.

The schools put up 1500 tons of corn and grass silage a year and harvest 150 to 200 acres of corn for grain. Grain yields average 35 to 50 bushels per acre. Coastal Bermuda

grass hay yields for 1959 were more than nine tons per acre, but dry weather cut the yields for 1960.

The schools' dairy and beef herds total, in all, around 1,800 head of Jersey, Hereford, and Angus cattle. The 150 Jersey milk cows include many prize-winning animals. The herd is being constantly improved by a replacement program and culling for high quality. The modern milking barns are equipped with pipeline milkers and bulk tanks.

During the summer, the schools sell about 50 per cent of the milk. When school is in session, they sell 20 to 30 per cent, in addition to supplying dairy products to the more than 800 students and some faculty members. They use about a ton of beef a week from the beef herd for the schools during the regular session.

Poultry includes 6,000 to 8,000 laying hens, plus 16,000 to 18,000 broilers and 3,000 turkeys raised each year. The poultry flock provides meat and eggs both for the schools and for sale. They also raise about 750 hogs a year. All the hogs they feed are sold.

"We can't raise enough to supply ham and pork chops for all the students," Farm Manager Stone says with a knowing smile.

The schools have more than 100 buildings. Many were built by the students, who even cut the slabs of tile for the roofs.

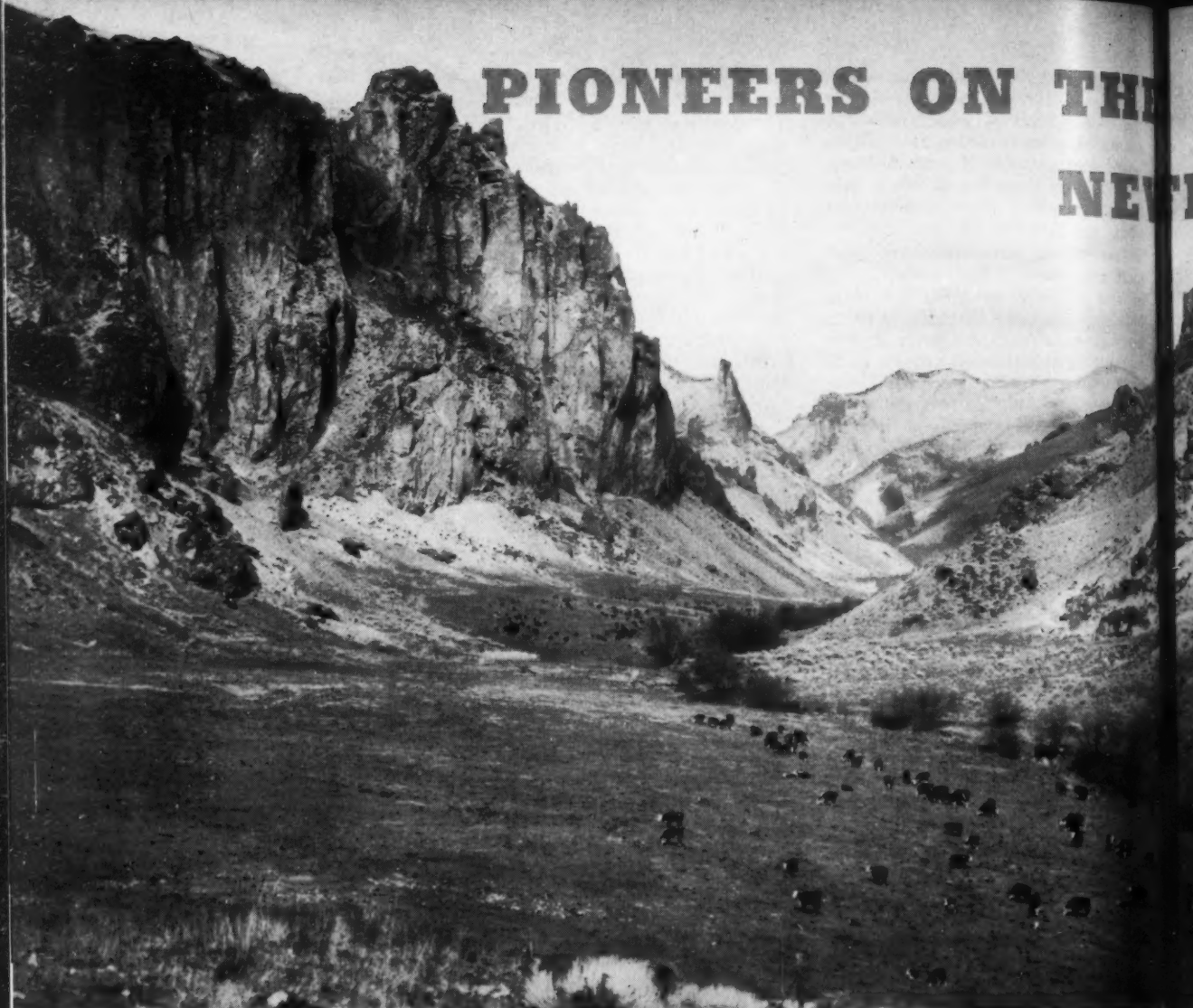
These buildings include the dairy barns and silos. Painted white with red tile roofs and situated on a hill-top overlooking hundreds of acres of green pastures, they make a very striking group.

The 30,000 acres of land include 600 acres in the carefully landscaped campus of Berry College and Mount Berry School for Boys. Like the rest of the land, this campus area is kept neatly tended by the students as a part of their work-experience program.

"We believe," says President Bertrand, "that the sheer aesthetic appeal of our campus is an important influence on the educational and spiritual growth of our students and staff."

This aesthetic appeal reaches out also to the well-managed fields, pastures, and woodlands. There it continues to reflect in the modern age of science the dual objective of conserving the human and natural resources that caught the imagination of the two great conservation leaders of a half-century ago.

PIONEERS ON THE NEW



Very size of holdings of BLM staggers many people—nearly 500 million acres—as shown on charts on pages 23, 24 and 25. As Bureau Director Karl Landstrom succinctly stated, “the unreserved public domain is really a great national land reserve.”



Harold T. Jorgenson is a land economist with the Bureau of Land Management. For many years he has been associated with public land management in Alaska and in the West. Abroad he has assisted with natural resources development in Egypt and land tenure reform in Somalia. His recent work has included collaboration on a book on Alaskan Land Resources for The Conservation Foundation.

THE New Frontier is gaining headway in the Bureau of Land Management of the Department of the Interior. This is important for this agency has a major role to play in the effort “to get this country moving again.” It has custody of a vast area on the public domain. It can arrange for the good land use and good land tenure by which latent natural resources may contribute to the development of our nation.

This agency has had long experience in developing our frontiers. It has nearly always administered the public domain out of which so much of the United States has already been built.

There are many new ideas in this Bureau about the way public lands

By HAROLD T. JORGENSEN

should be used and how its rights should be distributed to foster amenable development of the country. Under the leadership of Secretary Udall there may be what amounts to an almost complete reversal of the policies of the past. He is seeking to bring the program of the Bureau of Land Management into the second half of the 20th Century in line with President Kennedy's recent forthright address to Congress on America's natural resources.

The new approach to management of the public lands will mainly affect the West. In eleven western states, 48 per cent of the total land area is federally owned. About 177 million

THE FRONTIER



Best conservation news in years is that the Bureau of Land Management in the Department of the Interior proposes to streamline and modernize its programs to bring them into the second half of the 20th Century and more in line with President Kennedy's conservation objectives. Some of the Department's thinking is outlined here by a veteran BLM economist of broad and varied Bureau experience in all phases of land management

the basic legislative authority for the conservation, utilization, improvement, and development of the remaining public domain lands of western United States. Its passage marked a great leap forward in the management and protection of our public lands. It brought to a close their headlong disposal, and the beginning of intensive management by the Department of the Interior. There remained more than 180 million acres of "unreserved and unappropriated" but largely culled-over public domain.

The act brought nearly all grazing of domestic livestock under control on the western ranges. It afforded general land classification authority. This limited the operation of the homestead, desert land entry and other disposal laws to land classified as suitable for such disposition. It left the public domain open to mineral prospecting and mineral location.

In due course, the administration of public lands under the Taylor Grazing Act contributed a great deal to the conservation and improve-

ment of our land resources, and more or less formed the arrangements by which cattle, lumber, mining, and agricultural interests—the traditional land users of the West—could use or acquire public lands.

Meanwhile, the West was undergoing great change in many places and the provisions for the customary uses were not sufficient for its needs. An increasingly populated and urbanized West had new land use demands. The public lands were growing in importance for outdoor recreation, watershed protection, wilderness areas, wildlife habitat, industrial utilization, water supply, and suburban development. Because these land use needs were inadequately attended to, public land management along traditional lines was becoming increasingly controversial.

There had been some serious agitation for change in public land management since World War II and some important responses. For one thing, the old General Land Office and the Grazing Service were combined in 1946 into a new agency to form the present Bureau of Land

Steaks, roasts, mutton, lamb chops—all these are produced on the public domain. Not so well known is fact areas also contain forests with recreational potential.

acres, or 24 per cent of the total land area, is public domain or acquired land under the jurisdiction of the Bureau of Land Management. The map on pages 24 and 25 shows the land in federal ownership by states.

The following attempts to suggest a way to approach the future management of our public lands. The new Administration has already made a good start toward modernization but there is still much to be done. Before we even begin an exploration of its parameters, though, let us see where we have stood in the management of these lands.

Necessity for Change in Management

It is well over a quarter century since the Taylor Grazing Act, approved on June 28, 1934, provided





Good rule of thumb is when you can see small stones and other debris on a pasture at any distance, the forage is being over-utilized. Pasture shown above is on the Boise National Forest, pasture below on a BLM area. Obviously BLM must have support from public, the President, and Secretary of Interior



Management. This resulted in decentralized, broadened, and more effective management of public land resources. There were also some new major emphases in land management. More attention was given in many places in the West to the lease and sale of land under the Small Tract Act for homesite, business, and recreation purposes. The Recreation and Public Purposes Act passed by Congress in 1954 amplified earlier legislation to make public lands available for lease or acquisition by states, counties, or municipalities for recreation and other purposes under conditions which insured their public utilization and the public payment for them. In 1955, the Congress passed Public Law 167 which provided for multiple use of surface resources on mining claims on public lands. And great strides were made in modernizing the land

office records of the Bureau of Land Management.

Western development had undergone such change, however, that these innovations, important as they were, did not really meet the need. Many of the old land laws were obsolete. Land for the future was still there but the legal forms for its use and acquisition were inadequate. On top of that, the land offices were inadequately staffed to handle the thousands upon thousands of applications filed annually for private use and acquisition of public land and mineral resources. To complicate matters further, the charges made for land and its resources, or the fees for services rendered in making them available, long ago had generally become too low. With mounting pressures for additional land uses, they were causing trouble instead of aiding development. The setting of

prices for use or purchase of land at less than their real value, as either prescribed by law or by administrative practice, had given rise to a great deal of promotion and speculation in connection with Uncle Sam's land.

The time was ripe for a more positive approach to management of public lands, but there were certain roadblocks which stood in the way. There was the uncertainty about the continued federal ownership of the lands. The preamble of the Taylor Grazing Act states "pending its final disposal" certain things authorized by the act may be done. It has been said, "This phrase was rather clearly a political compromise, necessary to alleviate the opposition of those who did not want permanent federal ownership of land." Moreover, the Congress had been given to understand at the time of enactment of the Taylor Grazing Act, that both the use charges and management costs for these lands would be kept low. The memories of such compromises still hampered the Bureau of Land Management. In the Congress, however, these attitudes had gradually changed.

The management of the public domain was also quite tradition-bound by outmoded economic theory. By and large, the belief persisted that the "invisible hand" of economic forces would automatically harmonize private and social goals in land utilization in the West—this despite the fact that a free economy was no longer really fully operative there. Needless to say, this did not really happen in many places.

President Kennedy's recent special message to Congress on natural resources was attuned to present day needs in our western states. It contained a mandate for balancing up the usage of public lands for grazing, forestry, recreation, wildlife, urban development, and minerals in the public interest. It called for greater improvement of the public lands by soil conserving practices, water saving works, and revegetation efforts. And it arranged for an overhaul of charges and fees to make them accord with values received.

Introducing New Concepts

Looking to the future, what must be done? To begin with, a substantial change is necessary in our view of the role of the public domain in our national development. The writer, with the advent of the new Administration, suggested that the remaining public domain be looked upon as a reservoir out of which the future land needs of the American

people should be met in a manner which would best serve the national purpose. The new director of the Bureau of Land Management, Karl Landstrom, very effectively symbolized the idea by stating that the "unreserved public domain is really a great national land reserve from which future needs can be supplied as lands reach their highest use in a growing population."

In setting out on a new approach to public land management, the view was also taken by the director that the so-called "unreserved public lands" in the western states are not "unreserved" at all. Literally, of course, this is so. All public domain lands in the West, if they are not permanently withdrawn for a particular use or purpose, are still temporarily withdrawn. Under Executive Orders dated November 26, 1934, and February 5, 1935, all vacant, unappropriated, and unre-

served public land in the United States was withdrawn from entry or disposal, pending its classification, to determine the best uses to which it could be put. These are the hallmark orders which facilitated the establishment of the federal grazing system and the advancement of national conservation under the Taylor Grazing Act. Under these orders, when an application was filed at a land office it had the effect of a petition that the land be opened to entry for some purpose under the public land laws.

As a further step, a public land moratorium on most types of non-mineral applications and petitions for public lands for an 18-month period was declared on February 14, 1961, by the Secretary of the Interior. This action was mainly taken because, in the words of the moratorium, "the unrestricted privilege of filing of applications has seriously

impeded both the orderly and expeditious disposal of public lands suitable therefor to states, local governmental units, private organizations, and individuals and the orderly and efficient management of those lands best suited for continued federal administration in the public interest." The moratorium will last until September 1, 1962, but it will not affect any of the applications that were pending in the various land offices. It also will not affect any applications submitted by state and local governments.

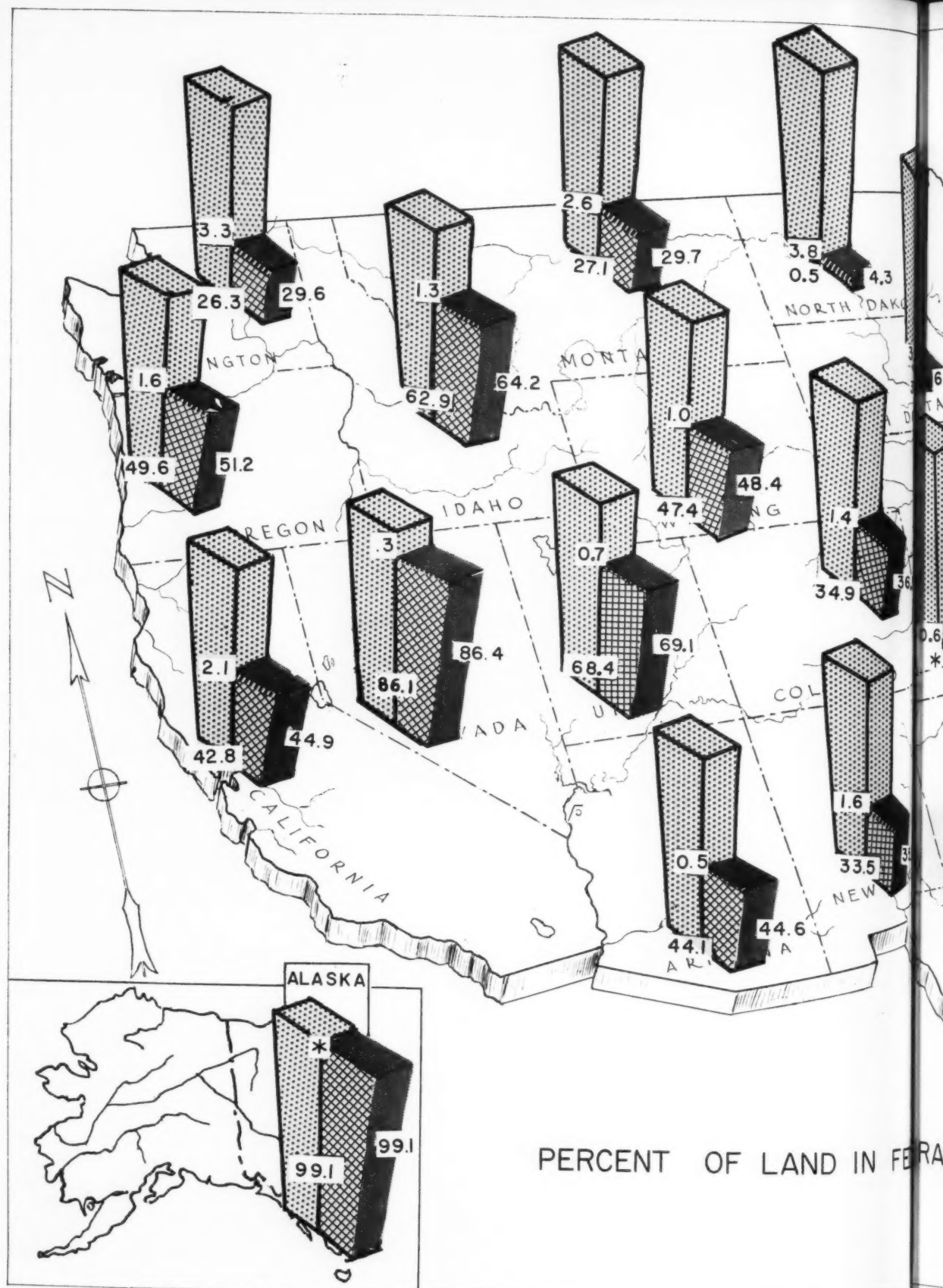
In recent years, the land offices have been swamped with many thousands of non-mineral public land applications. Many of these were filed by earnest citizens who wanted to acquire a tract of land in accordance with the best tradition of development of the frontiers of America. But a great many were also filed un-

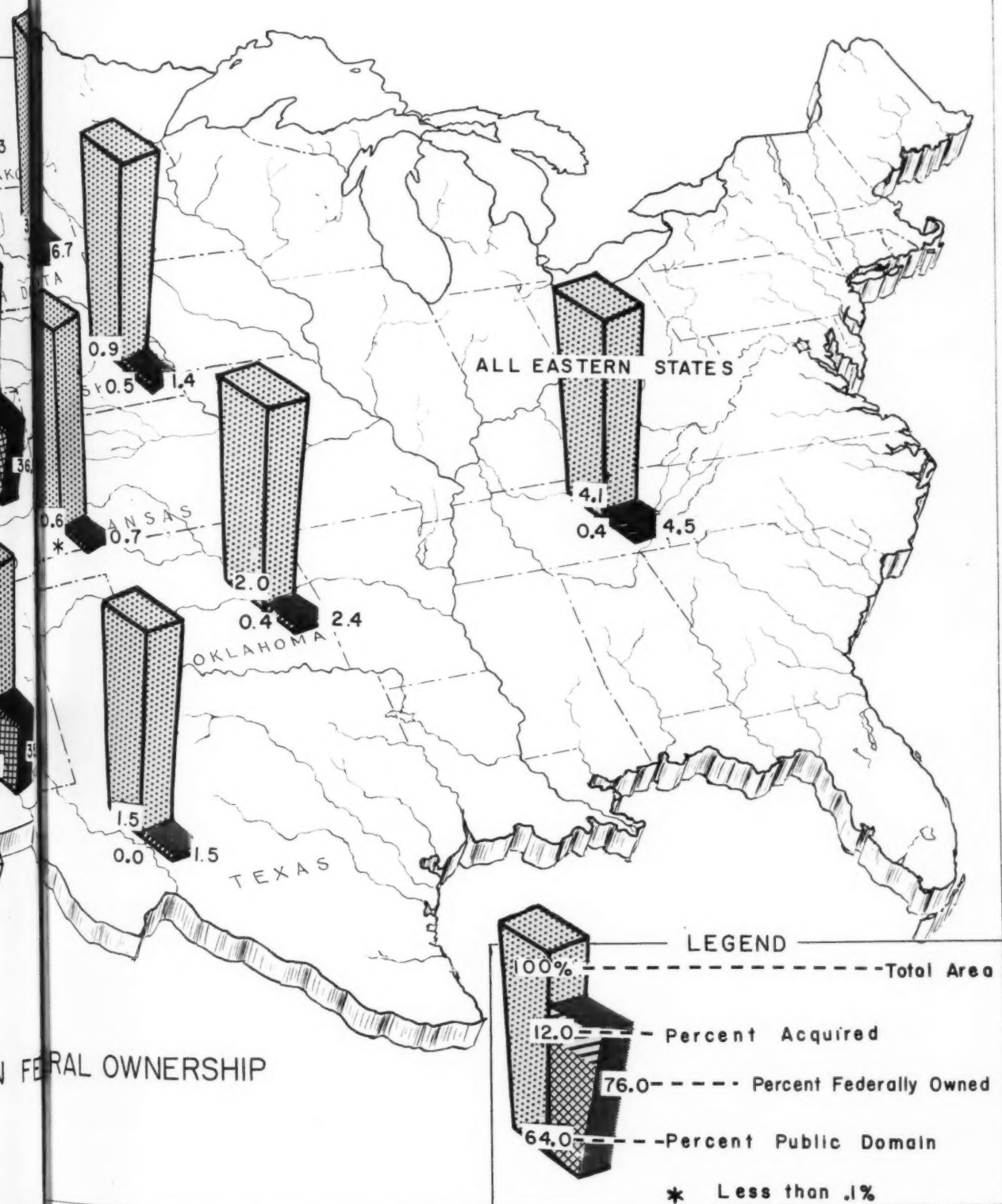
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Public Lands Under Exclusive Jurisdiction of the Bureau of Land Management, 1960

STATES	Vacant public lands			Reserved lands ¹			Grand Total
	Outside Grazing Districts	Within Grazing Districts	Total	LU ²	Other	Unperfected entries	
	acres	acres	acres	acres	acres	acres	acres
WESTERN							
Arizona	1,913,092	10,528,962	12,442,054	39,127	563,010	16,614	13,060,805
California	13,064,690	2,608,520	15,673,210		156,592	150,362	15,980,164
Colorado	599,822	7,490,345	8,090,167	37,536	249,442	6,171	8,383,316
Idaho	576,977	11,075,085	11,652,062	73,316	287,493	172,547	12,185,418
Kansas	1,431		1,431				1,431
Montana	1,178,861	5,205,969	6,384,830	1,902,041	21,825	34,933	8,343,629
Nebraska	6,240		6,240			3,865	10,105
Nevada	3,583,785	42,442,668	46,026,453	3,383	1,249,486	81,403	47,360,725
New Mexico	390,572	12,738,435	13,129,007	270,884	759,011	18,625	83,937
North Dakota	78,908		78,908		5,029		14,177,527
Oklahoma	22,749		22,749		12,854		35,603
Oregon	781,591	12,371,616	13,153,207	94,923	2,211,812	11,803	15,471,745
South Dakota	271,805		271,805		13,680		285,485
Texas							
Utah	98,757	23,998,434	24,097,191	18,749	175,375	22,952	24,314,267
Washington	364,997		364,997			3,735	368,732
Wyoming	3,012,916	13,184,816	16,197,732	9,715	1,377,904	26,884	17,612,235
Total	25,947,193	141,644,850	167,592,043	2,449,674	7,083,904	549,894	177,675,124
EASTERN							
Alabama	3,033		3,033		10		3,043
Arkansas	2,692		2,692		327	40	3,059
Florida	1,194		1,194		40	160	1,394
Illinois	254		254				254
Indiana	13		13				13
Louisiana	10,709		10,709		77	37	10,823
Michigan	5,127		5,127		13		5,140
Minnesota	57,480		57,480		20,206	2	77,688
Mississippi	4,227		4,227			240	4,467
Missouri	280		280				280
Wisconsin	1,453		1,453		80		1,533
Total	86,462		86,462		20,753	479	107,694
Alaska	270,200,342		270,200,342		28,064,785	1,143,093	299,408,220
GRAND TOTAL	296,233,997	141,644,850	437,878,847	2,449,674	35,169,051	1,693,466	477,191,038

¹Data incomplete. ²"Land Utilization Project" lands purchased by Federal Government under Title III, of Bankhead-Jones Farm Tenant Act now administered by Bureau of Land Management. Source: Statistical Appendix, Annual Report of The Director, Bureau of Land Management.





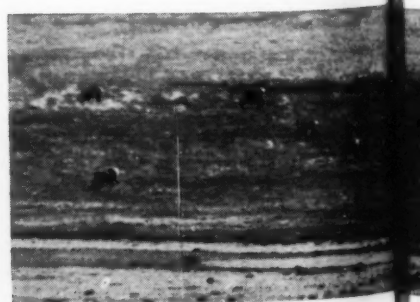
How Best to Control De

An aspen grove on the Kaibab National Forest, Arizona. The Kaibab Plateau is now contained within this forest and Grand Canyon National Park



CONTROL of destructive wildlife populations is a major management problem in many of our national parks and monuments. National Park Service personnel and concerned elements of the public are in agreement that control is essential. However, differences arise over the basic question: What methods consistent with National Park Service law, policy, and objectives are available for use in solving the dilemma of too many wild animals in a wildlife refuge?

Before approaching the problem directly, let us first see why control of wildlife is of primary importance. No more suitable example comes to mind than the classic case of "wildlife management" on the Kaibab Plateau, an area of the Southwest



roDestructive Wildlife

Populations on Our National Parks

now contained within the Kaibab National Forest and Grand Canyon National Park. Here was a portion of the scenic West so superlative the earliest visiting scientists considered it the most enchanting region they had ever beheld. Wildlife resources of the Kaibab were so outstanding that they received full protection in 1906, when President Roosevelt designated the Kaibab Plateau as Grand Canyon National Game Preserve. In so doing, the "Conservation President" gave official recognition to wildlife values before the designation of the present day Grand Canyon National Park, whose north rim includes part of the Kaibab. Government hunters and biologists moved into the region, terminated public hunting of deer, and con-

By G. W. CORNWELL

ducted a very efficient extermination of all large predators, including eagles. Within eighteen years, the protected deer herd increased from an estimated 4,000 animals to 100,000.

An additional burden of more than 20,000 sheep and cattle were grazed on the once lush meadows of the Kaibab Plateau. By 1924, the over-population of herbivores had destroyed the vegetation of the once superlative plateau so that it became a near botanical desert, and mass starvation of wildlife occurred. A more natural situation exists on the Kaibab today, but only because the herbivore population, which have the capacity to destroy their own

habitat, are kept under control. The Kaibab's tragic example is repeated yearly in many parts of our land, including our national parks. Control of destructive wild animal populations is a must if the scenic beauty, vegetation, and wildlife of our national natural museums and laboratories are to be maintained!

Since unanimity exists as to the need for control of over-abundant populations of animals, we may best focus our attention on the methods by which control may be realized. Wallace B. Grange, in *The Way to Game Abundance*, aptly speaks for most wildlife biologists when he says:

"When pronounced abundance of a game species occurs,
(Turn to page 47)



Bison going to water on the Kaibab Plateau in Arizona, which was set up as the Grand Canyon National Game Preserve in 1906 by "Conservation" Pres. Theodore Roosevelt



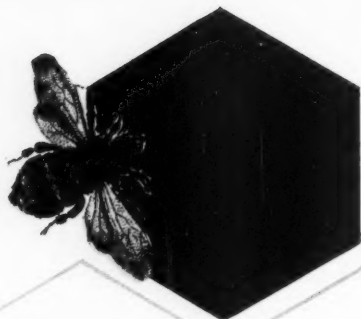
Mule deer grazing in green pasture of Vermont Park. Although this is now good grazing land, over-grazing can become problem if wildlife control is not used



G. W. Cornwell

G. W. Cornwell is presently a professor of Wildlife Management in the School of Natural Resources at The University of Michigan and is a candidate for a Ph.D. in Wildlife Man-

agement. He has served with the National Park Service as a ranger-naturalist and with the U. S. Fish and Wildlife Service as a waterfowl biologist in Alaska. He has also taught science and mathematics in the Michigan public schools. He is a member of numerous biological, wildlife, and conservation organizations and has written several articles for leading conservation publications. This is his first contribution to AMERICAN FORESTS.



A BEEIN' IN THE OZARKS



Floyd Moore and assistant, William Akins, set off on bee-hunting trip



By HANK BILLINGS

DEEP in the Ozarks hill country, near the Missouri-Arkansas border, is the Drury Refuge, home of deer, wild turkeys, and wild bees.

It was wild bees that Floyd Moore, assistant superintendent of the Missouri Conservation Commission refuge, was seeking as the pickup jounced to a stop on the forest road.

Slowly, in the sudden silence which came when the truck engine died, emerged the soft sound of a breeze in the ridge pines.

Then, closer at hand, came the lazy yet purposeful hum of insects.

"Try and find them," Moore invited the observers, as he unloaded the truck. "They're up high in a dead black oak."

Igniting a rag, he stuffed it into a bee smoker, a funnel-like gadget which puffed like a chimney when he pumped the bellows.

AMERICAN FORESTS



1



2



3



4

1. Bee seeker Floyd Moore uses bee smoker to de-bee felled tree on the Taney County Drury Game Refuge, Mo.

2. Moore is oblivious of the flying sawdust and bees as he sends his saw chewing through the toppled bee tree

3. Moore, shunning gloves and mask, illustrates the expression, "sticky fingered," as he robs tree of the honey

4. Here, bees rim a keg which Moore will use to transport them to a hive

5. Probing into the incision in the dead tree to find the queen who will attract the swarm might be dangerous

called out to the retreating team.

Chuckling, he smoked bees out of the hair of the kneeling observers.

Reluctantly, Moore pulled on long rubber gloves and a mask of flour sack and screen wire.

"I'd much rather work without them," he explained. "They're too hot."

Moore decided to let the bees calm down while he went on to the second of five bee trees he had "coursed out."

"I have to work some," chuckled Moore, as he steered through fender-high broom sedge which he insisted hid a road, "or I could have found a lot more."

"It's a hobby with me, like some men have a hobby of sitting in a beer joint all day," he declared. "I can go all day, as long as I have my cigarettes, and have as much fun as if I had good sense."

"I don't give a hang if I never sell any honey. I want the bees. I want to try to beat them."

Just the same, Moore has nothing but contempt for anyone who robs a bee tree of honey without taking the bees, thereby dooming them.

"They oughta be arrested," snapped Moore, a deputy sheriff himself for 11 years.

Born in nearby Stone County, Moore was a youngster when he started cutting bee trees with his

(Turn to page 44)



5

Next, he rolled out of the truck bed a keg which would become a temporary hive for the evicted bees. Snapping off a branch, he pushed it into the keg.

"Without it, they'd bunch up and smother themselves," he explained.

Patiently, Moore pointed out for the observers a halo of black specks which marked the swarm high up on the dead tree.

This swarm was "coursed," or followed, from a puddle in the forest road rather than from "bait" placed in a forest clearing.

"I use honey combs soaked with sugar-water and sweet anise for bait," Moore said. "Honey would work, but it takes too long for the bees to fill up with honey."

Bees load up on the bait and head for home, sometimes two or three miles away. They fly at treetop

height, faster than a bee seeker can follow, but their course can be plotted quickly because of their literal beeline for home.

Moore hefted his chain saw, his only modern touch to the old Ozarks art of "goin' a-beein'," and calculated the trajectory of the tree's tumble.

He yanked the starter cord and a cruel snarl drowned the swarm's hum as the blade bit into the thick bark.

Crack of splintering bark was echoed by crash of the tree through scrub oak and brush.

In the silence which came as the saw unwound, its whine was rivaled by the buzzing of the aroused bees.

"Their hives broke when the tree fell," Moore yelled. "They're going to be mean."

"Get down low and stay still," he



Wahkeena, former home of Dr. and Mrs. Frank Warner, now run by the Ohio Historical Society as a wildlife haven, offers many spots of quiet beauty for rest and contemplation

The Story of Wahkeena

By JACK BEHRENS

A WOMAN'S desire to let others share her interest in a wildlife haven she labored years to build is being fulfilled today—thanks to the cooperation of the Ohio Historical Society.

Shortly after her death in 1956, noted wildlife lecturer Mrs. Frank Warner requested in a will that her beloved estate, Wahkeena, a 150-acre plot near Lancaster, Ohio, be turned over to those interested in the study of nature and that the land be used as a game preserve.

The terms of the will and other complications forced one national wildlife group to reject Mrs. Warner's offer, but the Ohio Historical Society stepped in quickly to accept the sprawling acreage and abide by the late owner's wishes.

Today, Wahkeena (an Indian term meaning "most beautiful") is called one of the scenic wonderlands of the rambling, southern Ohio countryside. A quiet retreat, serene and mysterious, the estate is a study of contrasts with the throbbing traffic that whizzes by on a federal four-lane highway less than a mile away.

"We've tried to keep it pretty

much as Mrs. Warner left it," says Ohio Natural History Curator Edward S. Thomas. "As the years go on, we hope to put in more and more native material. Native flowers and plants will thrive much better and won't require so much pampering and attention. We think it will be for the best and, at the same time, more typical."

When the late Dr. and Mrs. Warner first purchased the heavily wooded area seven miles south of Lancaster more than 30 years ago, local citizens shook their heads in disbelief that anything could be done with the dense entanglement of brush and woods.

Within a few years, the energetic Mrs. Warner and her husband, a prominent physician, were living in a rustic home complete with a guest house, stable, garage, and log-hewn furniture. Quaint early American lamp posts were placed around the house and strung along the foot trails providing candlelight for Mrs. Warner's frequent evening social affairs.

After her husband's death, Mrs. Warner kept herself busy managing

the large estate. She personally directed the planting of four acres of flowers, the construction of an acre and a half lake and several smaller ponds and the placement of scores of bird feeders throughout the estate.

The lake, called Odonato, was dedicated in 1951, and became Mrs. Warner's favorite spot while working on a nature lecture or merely relaxing. The foliage-shrouded lake, which washes softly against green banks on the front lawn, is fringed with such colorful flowers as Japanese iris, tiger lilies, and lizard's tail.

Though the wild geese and ducks have become irregular visitors to the area since Mrs. Warner's death, two stately peacocks still hover close to the back porch of the Warner home. It was here that Mrs. Warner would feed them each day before she took one of her long walks around the grounds.

Wayne Hedges, caretaker of the estate during the past six years, says that of the 150 acres now owned by the society, only 90 are actually part of the main grounds. "Some of the land is just impossible to clear or use. It forms kind of a natural bound-

dary around part of the property," he added.

Asked about the reactions of people who have seen Wahkeena, the white-haired groundskeeper said, "Most people say they like to come to see the birds. They just can't get over the fact that there are so many types and varieties here. It took Mrs. Warner years to get wildlife to come here. But she did it with patience and friendliness. 'Course, there are some folks who just like to look around the cabins and walk around the trails."

According to Curator Thomas, who along with Ohio Historical Society Director Erwin G. Kepp, is in charge of the estate, Wahkeena boasts plants and wildlife similar to the hot climate of Tennessee as well as the frigid temperatures of Ontario, Canada.

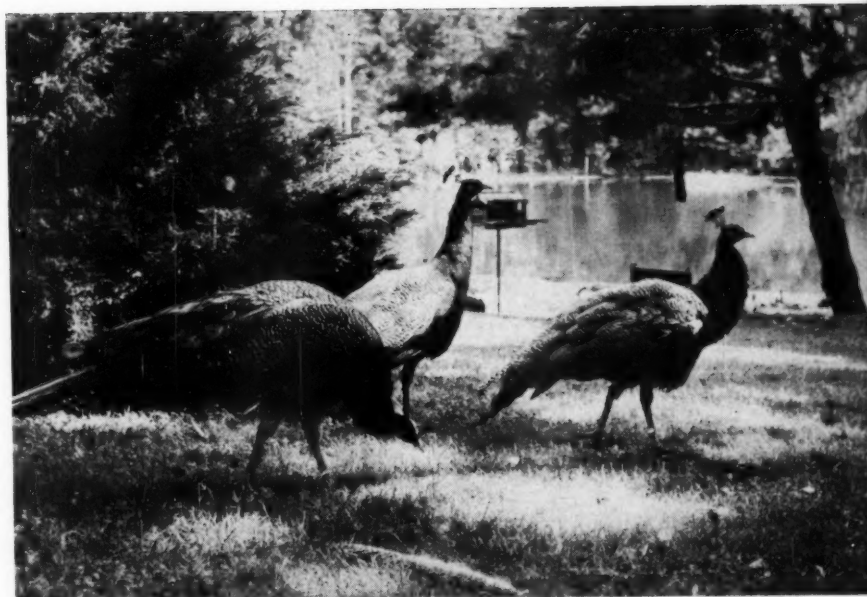
The walls of black hand sandstone behind the Warner house are partly responsible for Wahkeena's beauty, the naturalist points out. The dark stone is covered with particular kinds of moss, ferns, and flowers which "you won't find anywhere else in the state of Ohio," Thomas commented.

"Black hand sandstone is so called because it comes from the narrows of Licking River east of Newark about 40 or so miles northeast of Wahkeena," he continued. "Originally, it was supposed to have a hand carved in the sandstone and this was either painted, dyed, or 'weathered' to a black color. The black hand belt is an area not more than 10 miles wide and about 20 miles long," Thomas explained.

In the curator's opinion, many of the flowers at Wahkeena like the sour ground or "acid soil," as it is called. Rhododendron, azalea, mountain laurel, trailing arbutus, and others need acid soil and cannot live in the presence of lime. According to Thomas, such plants won't grow well in the western part of the state.

The estate is not only of interest to naturalists—it is of archaeological importance to scientists, too. There are approximately 34 archaeological studies being conducted within a four-mile radius of the estate and investigators believe they may be merely scratching the surface of this untapped region.

Though the Warner home and



Colorful peacocks head for the lake front. Although one has recently died, the other two peacocks still hover near the back porch where Mrs. Warner fed them every morning

Small, foliage-covered island rises up from picturesque Lake Odonto. This is the largest of the three lakes located on the estate



guest cabin are closed, the visitor can easily see the late owner's knack for decorating and her love of the outdoors by peering in the windows of the log-constructed home. Knotty pine paneling is used throughout the main house and a huge fireplace covers most of the living room. Mrs. Warner collected and selected the stones for the fireplace.

In an era when pine paneling was practically unheard of as an interior

decoration, Mrs. Warner was considered a pioneer.

Cool water trickling from a well a short distance from the house supplied the Warner household with drinking water even though modern tap facilities were plumbed in when the house was built. "Mrs. Warner used the house to sleep in. The rest of the time she was out and around," the caretaker said.

(Turn to page 56)

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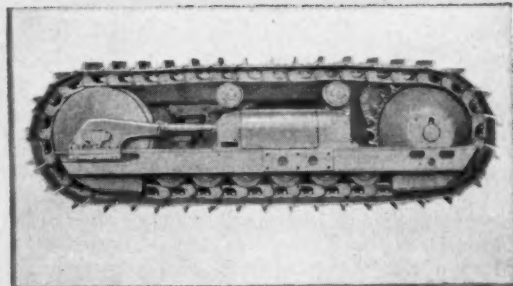
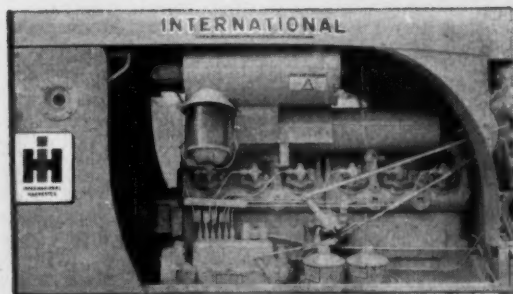
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From the lookout tower on Mount Constitution, high above Cascade Lake, most of the other 171 islands of the American Islands in the San Juans are visible, plus the Canadian Channel Islands and mountains on the southern and western mainland

Island Wilderness

By TOM BURRIER

A classic comic strip dilemma—the vacationing family arguing over mountains, seashore, or lake—is happily resolved in real life once the automobile rolls aboard a car ferry, outbound for Orcas Island in the San Juan group of Washington's northern Puget Sound—destination: the 6,000-acre Moran State Park.

Do you want a sandy sea beach campsite with gentle waves as a lullaby? Or perhaps one in the forest primeval, lofty Douglasfir and western cedar forming a canopy? Sleeping bags at streamside, or bivouac near four fresh water lakes within the park, Moran has them all, offering the choice freely to vacationers.

Orcas Island, a giant horseshoe nine miles wide and twelve, long, is the largest of 172 islands in the American San Juans, just short of the Canadian water border. The continuing archipelago into British Columbia waters, is the "Channel Islands" in Georgia Strait; the dividing boundary was arbitrated by Germany's emperor in 1872, after a thirteen-year dispute between Britain and the U. S.

Many of the islands on both sides are heavily forested. Some of the smaller islets are privately owned,

but they offer sheltered coves and inlets ideal for small boat beaching, picnics, and overnight camping. Island owners don't object—in fact they welcome boat-borne visitors, for this is a frontier-friendly area in every respect.

Jumpoff point for the San Juans is Anacortes, Washington State Ferries' newly-built mainland terminal. It is 75 miles north of Seattle on a branch of U. S. Highway 99; from the east, U. S. Highway 10 joins "99" at Seattle. Seagoing car ferries dock at Lopez, Shaw, Orcas, and San Juan Islands enroute to Sidney on Canada's "Big One," Vancouver Island. Round trip charge for car and driver (to Sidney) is twelve dollars, passengers charged additionally. The amount is less, of course, if your destination is a San Juan Island stop. During the summer months, a "through" ticket holder may lay over at any of the island stops, then proceed later without extra charge.

In the San Juans, boats are to islanders as cars are to landlubbers. Hardly a resident but boasts one or

two small craft at a shoreside landing. Recreation centers on the sea—salmon fishing, clam digging, crab trapping, and "coming into town" from isolated islets for mail and supplies. There are no railroads, bridges, freeways, or scheduled airlines in the San Juans, a condition most resident islanders hope to maintain.

From the ferry dock at Orcas, a good road curves around the deep water inlet of East Sound to enter Moran. The park is heavily timbered, with a network of roads and trails branching out to camp areas, the salt water boat moorage on Rosario Strait, and the 2,500-foot peak of Mount Constitution.

Atop this island high point a 50-foot stone observation tower affords a breathtaking panorama. To the south loom the snow-covered Olympic Range peaks, on Washington's Olympic Peninsula. East are the Cascades, high backbone of the state's western mainland. North and northwest, the Channel Islands fade away into Georgia Strait, and Vancouver Island bulks due west.

"Let's go fishing!" is the normal visitor reaction, and there's a wide choice of fins in and around Moran.

Fresh water lakes teem with rainbow and cutthroat trout, both native and state-planted. Boats are available at minimum rental, or much of the water can be fished from shore, using flies, eggs, or artificial lures. Narrow, noisy creeks are especially suited to younger fishermen.

Glamour fish of the islands, as in all Puget Sound, is salt water king salmon, a never-to-be-forgotten thrill for trolling fishermen. Lunkers to fifty pounds are common. Silver salmon, a smaller cousin, furnish sport from March through October. Boats, motors and tackle can be rented reasonably in Moran or at the half dozen resorts strategically spotted outside the big park.

Salmon barbecues, in centuries old Indian style, are a mainstay of summer hospitality on Orcas and the other islands, as are crab feeds on the beach after a morning of tending the "pots" anchored in bays and inlets around Orcas Island. And a clam-bake of freshly dug bivalves is as common as corn-husking bees were in the Midwest. North, in the Channel Islands, resident Indians specialize in lamb barbecues, and delight in hosting boat visitors.

Three main features of the San Juans are apparent to even the most casual visitor—the wild, unspoiled beauty of the myriad islands themselves, salt water rushing through deep channels on a tide change, the helpful friendliness of residents in every activity, and the surprisingly low money cost of a vacation stay in these evergreen islands.

Moran Park features tent camp grounds, but also provides space and
(Turn to page 55)



Washington State Ferry, "Klickitat," moves out of Orcas Island for another port in the San Juans after discharging cargo of auto and bicycle tourists

Motorboats are prohibited on the four lakes in Moran State Park. For fun and fishing rowboats rent at 25¢ per hour



Cascade Lake, Moran State Park, is popular spot with picnickers and campers. Tables and cooking facilities are available

JULY, 1961



CURING

Aerial and hand planting operations are slowly replacing such desolated areas with new growth

In May *American Forests* published Lynn Crone-miller's article on the final salvage cleanup of the Tillamook. Here Sam Churchill explains how the area will be rehabilitated

THE TILLAMOOK BURN

By SAM CHURCHILL

ONE of the most daring self-help projects in U. S. forest history is well on its way to completion in the state of Oregon. The project: rehabilitation of the Tillamook Burn, 550 square miles of tumbled, fire-torn land that the people of the state are replanting to forest.

Three forest fires ago, this blistered jumble of weather-bleached snags and crumbling slum was forest. The giant Douglasfir, spruce, hemlock, and cedar towered here and were one of the finest remaining stands of old-growth timber in the Pacific Northwest. The fires left them blackened, tottering sentinels standing guard over an area roughly half the size of Rhode Island.

Today, thanks to Oregon's far-sighted citizens, the same land—worthless and unwanted for 15 years—is getting a new rich covering of green from thousands of acres of young trees.

Since the start of the program in 1949, a total of 78,200 acres have been seeded from the air, a method proved and perfected on the burn. Another 45,000 acres have been replanted by hand while 30,000 acres have been restored by seeds carried by wind and wildlife from adjacent forests.

The millions of young trees already anchored in the ground, and the millions more that are yet to be planted and seeded, will mature a century from now into billions of board feet of harvestable timber. It is a layaway plan of magnificent proportions in which the U.S. taxpayer and his dollars have no part. The people of Oregon are not only footing the bill, they are also cutting costs by doing a great deal of the work themselves.

School children share in the project. Boys and girls working in pairs have planted more than 50,000 seed-

ling trees. The boys root open a planting space with a hoe-shaped planting tool. The girls set the tiny trees in place. Some of these earliest plantings date back to 1949 and are now six and seven feet in height. Some 1500 students from Portland's elementary schools annually participate in this work. In another voluntary program, Boy Scout groups have put in another quarter of a million seedlings. During the fall and winter months, when the soil is moist and the dormant, ankle-high seedlings go into the ground, it is not unusual to see a church group holding Sunday services on the burn. After the services, the women prepare lunch and the men plant trees.

Since 1951, selected inmates from Oregon State Penitentiary, quartered at a special camp in the burn, have done much of the work. Thus, as Governor Mark O. Hatfield points out, "the burn has a record of helping men to grow, as well as trees."

But before the accomplishments that are now a part of the Tillamook story can be fully understood, we must go back to a sultry August day in 1933 when tragedy struck. The morning sun glared down on Oregon's great Tillamook Forest like a glowing copper ball. A brisk east wind nosed its way among the tree-cloaked peaks and canyons of the Coast Range Mountains. In the coastal forests of the West, such a wind in summer and early fall is a feverish devil that brushes against moss and fern and forest twig, snatching at every bit of moisture. In its wake ferns droop, moss turns brittle, and the flame on a match lingers long and hungrily.

Shortly before one o'clock on this day a steel logging cable whined as it rubbed against the barkless skin of an old stump. Soon a trickle of

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Youngsters, from Portland's Fernwood School, get instructions on planting Douglasfir seedlings. Children have been planting on the Burn since 1949



A Swedish

AMONG the tours of the World Forestry Congress, Tour No. 2 attracted the greatest interest. In the beginning it was intended for 40 persons—one busload—but after the applications from many countries were received, it grew to three Greyhound buses carrying nearly 120 persons from Los Angeles in southern California to the goal in Seattle, Washington, the Congress city in the northwest corner of the U.S.A. The journey went over broad motor highways, over winding and high mountain roads, through dry deserts, through rich valleys, through unmanaged and well-managed forests, some with extraordinarily large growing stock.

Folks interested in forestry from 24 different nations took the trip. Swedes were in the majority with 25. The tour route was 320 Swedish miles (ca. 2,000 English miles) and took 12 days. The weather was good throughout, from hot summer in southern California, where it does not rain between April and November, to Oregon and Washington, where the climate increasingly resembles Swedish summers and is a little chilly.

The journey through California afforded many varying impressions. From the strictly forestry standpoint this can be said of the scattered pine forests in the extraordinarily dry sites in the South and the mighty redwood forest (*Sequoia sempervirens*) in the heavy rain, fertile soil lands in the North. Forestry in North America, however, is bound up with so much else that it was not always the purely forestry problems that took the limelight.

Forest fire, the enemy of the forest and water

We had a striking example of forest fire's importance on the very first day, Wednesday, August 17. The journey went up into the high country from Los Angeles, and the huge dam structures there were the subject of study. Through this series of construction works along the water course it is possible to supply the great cities with water, and also to save water from the

Editor Reports to His Readers

By HANS HEDLUND

Part I

Hans Hedlund, Managing Editor of *Skogen (The Forest)*, Executive Director of the Swedish Forestry Society, and a prominent Swedish forester, was a member of the large delegation of Swedish foresters who attended the World Forestry Congress, many of whom made the West Coast Tour of our forest lands. This is the first of a two-part article that was published in *Skogen* and is republished with Mr. Hedlund's permission. In general, the Swedes were intrigued by our system of multiple use, but were inclined to believe their own forestry industry is more modern than our own. They also believe Swedish forestry is in advance of our own on time studies, work physiology, and bodily care of forest workers. Keen to see the big redwoods, they were a little miffed when they were sidetracked into a California winery. Translation by R. E. Marsh.

the communities' water supplies. We know how fearful the people in pulp mills are about getting sooty wood in consignments of pulpwood. A little soot in the wood ruins several days' output of a paper machine.

At the outset we did not think it so serious if these rather poor forests burned up, but after we actually saw all of the effects of forest fire, it was easy to understand the desire of the Americans to make forest fires the responsibility of all the people and their protection a matter for everybody. "Only you can prevent forest fires" was one of the catch phrases we encountered in different places whereby an appeal was made to the public's sense of responsibility.

Water—always ice cold—however, tasted very good when pro-

vided from time to time with the temperature at 40°C. (104°F.). Refreshing ice water was something the Americans had an extraordinary ability to make available at frequent intervals during the course of the trip—likewise rest rooms and comfort stations; and, therefore, one never needed to worry during the course of the travel.

Fire fighters' exhibition

On Thursday, August 18, the journey continued northward and again up into the mountains. We were again confronted with bare fire-damaged country, and we came to a fire station, Chilao, which belongs to the Forest Fire Department of the Los Angeles District. Here we were given a brilliant demonstration of all phases of fighting forest fires. Most prominent were the helicopters and power sprays with tank wagons. With the helicopters well-equipped firemen were transported, and full sacks of water were carried out to the fire fighters. The fire hose was laid out from the helicopters over long stretches of land and coupled to the power sprays. We also saw more firemen at work, and were very strongly impressed with the determination and earnestness which characterize forest fire suppression. It was interesting to note that 96 per cent of the forest fires are extinguished before they become as large as 120 hectares (ca. 300 acres). The trend is in the direction of further improvement in this respect.

Recreation in the forest

In this Chilao forest, with 150-year-old *Pinus jeffreyi* and *P. lambertiana*, and also 300-year-old cedars, lunch was served by the well-equipped field kitchen of the fire force. Here we met for the first time the arrangements for the comfort of the public which are found in so many places in the forests of the U.S.A. The rectangular dining table with permanently set long benches is standard furniture in all such places. In addition there are water taps and enclosed fireplaces where

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spring floods so as to provide a steady supply both for the cities and for irrigation in the flat valleys between the mountains. Through irrigation, one of the most fruitful regions in the world has been created. They began by cultivating wheat, but this has more and more been changed over to producing fruit of all kinds. The California region leads the world in the production of oranges.

Up in the mountains is an experimental forest, San Dimas, where we encountered forests for the first time during the trip. Here was young pine which, because of the summer heat, must be planted in the fall. We had never seen these pines before, *pinus torreyana* and *P. coulteri*. The experimental area was 2,800 hectares (ca. 7,000 acres), of which 10 per cent is cultivated forest. Only 14 days before our arrival a forest fire had swept over practically the entire forest, which made a disheartening impression and brought us face to face with the real forest problem in America, the danger of forest fire. Ten million dollars a year is the average amount of public funds used for forest fire suppression in California alone.

The superintendent for the research center, Mr. Bentley, guided us around among the scattered charred tree trunks and explained the entire problem of getting forests established on these lands, perhaps not primarily for timber production, but also to prevent erosion, which can become terribly serious up in this alpine-like region through which the trip went. He explained, among other things, that to stabilize the soil trees were less effective than grass, which grows faster and is easier to establish.

Except for the forest fire problem, the day was devoted to the characteristics of dams. We saw dams of endless variety, and we fully understood that forest fires not only were a danger to the forest and the landscape but also to the water supply of the communities. Soot and charred bits of wood in the water as a result of fire are difficult to prevent and they can cause costly difficulties for



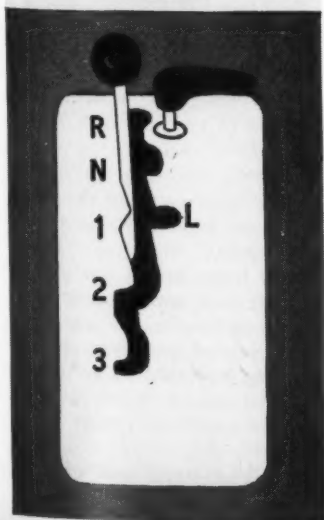
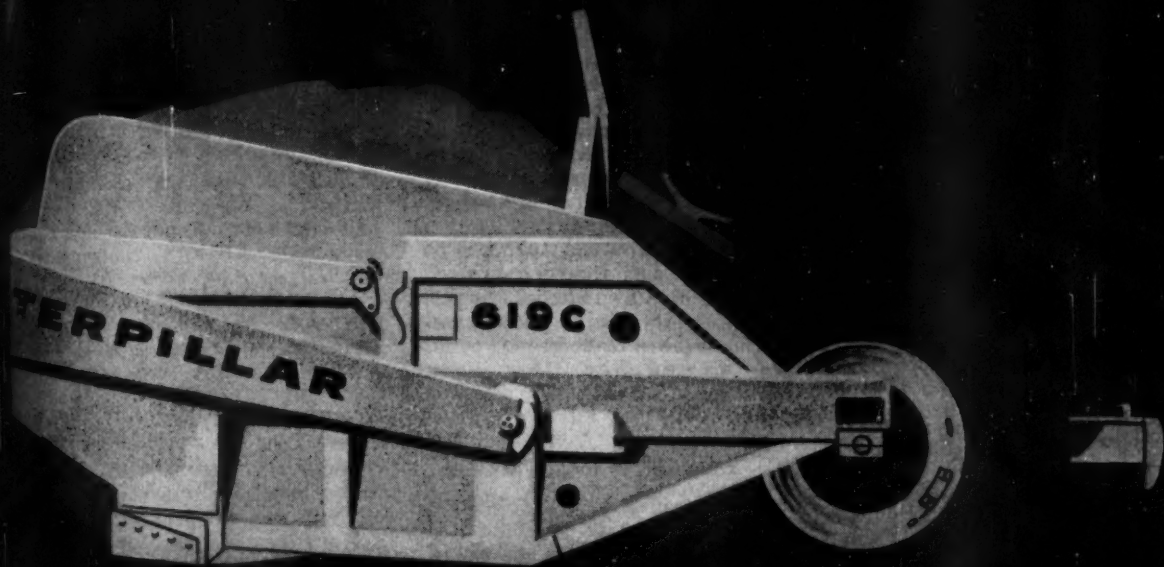
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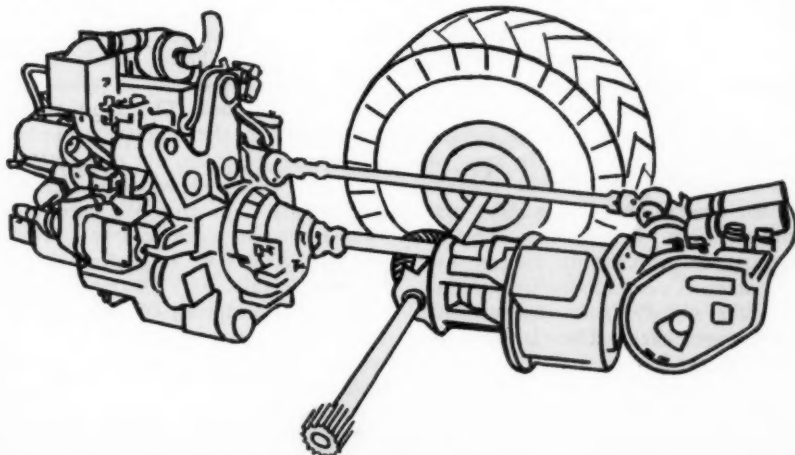
**ADVANCED AS TOMORROW
—CERTAIN AS YESTERDAY**



New 280 HP 619C offers choice of power shift transmission for faster, easier operation or direct drive transmission. Air actuated, live power cable control reduces operator effort. New, bigger 26.5 x 29 (22 ply) tires improve roadability. Top speed: 30 MPH. Capacity of matching Lowbowl scraper: 18 cu. yd. heaped, 14 cu. yd. struck. Also available: 25 ton PR619 Rear Dump Trailer built by Athey Products Corp.

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New, more powerful Cat D340 Engine (280 HP maximum, 250 HP flywheel at 1900 RPM). This economical 4-cylinder engine burns No. 2 fuel oil... has parallel-ported dual intake and exhaust valves and overhead camshafts for most efficient operation... has pressure ratio controlled turbocharger and aftercooler. Swingaway dash and pivoted crankcase guard simplify servicing. Unit construction assures easy servicing: engine, transmission, planetary final drives can be removed without disturbing adjacent components.



A Swedish Editor Reports to His Readers

(From page 39)

one can warm his food and prepare his coffee—and, of course, rest rooms. This area of 3,000 hectares (ca. 7,000 acres) is visited by nearly a million persons annually. The people from a town can come to such places to fish, ride, or recreate in some other manner. The cutting which was done in the forest was a very careful kind of selection. Mr. Coleman, who was the forester employed by the community, explained all this and that his prime duty was to look after the comfort of all the people on this area. In the forestry schools the students are especially instructed in the handling of public recreation and wilderness wildlife.

The buses carried us on northward through dry but beautiful landscape with scattered pines. On further through the Mojave Desert, where the agaves appear to be the only thing which can grow, a pitiful kind of pine, *Pinus sabiniana*, made a commendable attempt to establish a forest stand. Proof was often seen that even this desert land could be made fruitful if it were watered. Bakersfield, a city surrounded by desolate desert land, was the journey's hottest point, 43°C (109°F). It was wonderful to get into the cool buses after having eaten a field kitchen dinner in the open air.

Profitable forest industry

On Friday, August 19, the journey began in Visalia, California, and the forenoon was devoted to one sawmill. Here we made the acquaintance of logs of *Abies concolor*, which is here called white fir, and which is the most common species. The timber was stored in high piles, which were watered. The timber for immediate needs was kept in a pond. The band saw was the main machine, together with an edger, each operated by one man. There was a well-arranged, effective sorting works. Sawdust is burned in most of the American sawmills in characteristic tower-like burners. The machines were driven by electric motors. An interesting aspect was the company's commendable attempt to make money from the sawdust and waste bark. The latter was called forest humus and it was sold in sacks for use in gardens. The advertising claimed that wonderful

roses could be produced by scattering the ground up bark over the soil.

Our economic curiosity was stirred here. Questions were asked of the company's representative, but because of our ignorance about scaling methods it was difficult for us to get any idea of the prices and costs per cubic foot. It can be stated, however, that the workers on the average get around 100 crowns (ca. \$20) a day, that the sawmill owner gets the raw material cheaply, as measured by Swedish criteria, and that he certainly makes a good profit from his enterprise. More forest economy—if it can be called that—later.

Yosemite National Park

After stopping at a fire station where, because of the heat, the fruit and refreshments served were of greater interest than the hose and sprays exhibited, we came finally to a real national park, the Yosemite. "The most musical streams, the most famous forests, the stateliest granite domes, the deepest ice-created canyons"—thus wrote an author about this 300,000-hectare (ca. 750,000 acres) national park. Over a million people from all parts of the world visit this shrine of nature annually, where trained foresters and the private enterprise restaurants, camping places, hotels, etc., which they oversee, do a great deal for the people's comfort. For 5 Swedish miles (ca. 30 English miles) we traveled through the park, all of the time through reserved forests with trees of great size. Among the many species we saw, *Pinus ponderosa*, *jeffreyi*, *Iambertiana*, *monticola*, and *contorta*; of *Abies*, *concolor* were the most prominent, but there were also *Abies magnifica* and *Pseudotsuga taxifolia*, which is the most important species in Washington and Oregon. The high point was, however, the mighty examples of *Sequoia gigantea*, not the *sempervirens*, or redwood, which is located in northern California. We were told that a certain *gigantea* tree started to grow 2000 B.C. It is now about 60 meters tall (ca. 200 feet). But from the standpoint of height this was a little tree compared to what we saw later. It is, however, quite unbelievable that a kind of vegetation could keep on living over so

long a period. In evidence was an extraordinarily thick bark. This contains a substance which makes it fireproof. *Sequoia gigantea* is not used as raw material for sawmills. The trees occur mainly in scattered places in national parks.

This visit provided much else of interest, among other things waterfalls—one over 400 meters high (ca. 1,300 feet) and rocky canyon sides which rise 1,500 meters (ca. 4,900 feet) above the canyon bottom where the park's headquarters are located. Here also were cafeterias and a permanent tent town, where we stayed overnight. It was all well arranged. In addition to roe deer and red deer, a tame bear ran around among the tents and extended greetings.

The departure from Yosemite was on Saturday, August 20, and the journey then went westward to California's celebrated city, San Francisco, which with its location on the sea, its steep streets, high hills, fantastic speedways and daringly built high bridges, is something unique in the line of cities. All of us, nevertheless, had a far-away look in our eyes; we wanted to see more forests, more giant trees.

At last the redwood

Sunday, August 21, was the day for our longed-for goal—we would see the mighty *Sequoia sempervirens*, redwoods, the giant trees we had gained some idea of from Carlsson's *Geography* of our youth, with its picture of a carriage which traveled right through a tree. Many of us had precisely this giant tree in our mind when the journey, almost half way around the world, was planned. The Swedish group was, therefore, visibly irritated when the genial, friendly Americans wasted a whole forenoon to visit a winery, where we were offered wine to go with our purchased sandwiches. Finally, at 3 o'clock, we came to the Richardson Grove State Park, located near the Redwood Highway. The area was not large, but it was like going into a church, into a masterpiece of classical antiquity. It was to look with humble admiration upon what nature had created. The trees were huge, 2-3 meters (ca. 6-10 feet) in diameter and 60-80 meters (ca. 195-260 feet) tall, with straight, fine trunks. The stand was well closed

and appeared vigorous and healthy. The bus horns tooted, however, to go on. Someone said, "No sooner do the Americans get us into a forest than they take us away from it." Our irritation continued. Our hosts mollified us with the promise that we would get to see still larger trees, and this proved to be true.

The largest and tallest in the world

The culmination was reached in Bull Creek State Park, a reservation which was made with the help of Rockefeller money. Even though we didn't arrive until dusk began to fall, we must be eternally thankful for seeing this, the world's most remarkable forest stand. It is over 2000 years old, and the largest tree—"biggest in the world"—is 5.2 meters (ca. 17 feet) in diameter just above the root swelling, and 105 meters (ca. 340 feet) tall. The volume is estimated at nearly 1,000 cubic meters. The tallest tree, "tallest in the world," is 109 meters (ca. 350 feet) tall, but the diameter "only" 4 meters (ca. 13 feet). The reason why these redwood trees attain such great age is that the tree produces a chemical substance which protects it against termites and other insects, as well as rot-producing fungi and other pests.

We did have a little time to walk around in this forest, which made an ineffaceable impression, but the buses tooted inexorably and darkness fell. The journey went on to dinner in Scotia with the Pacific Lumber Company as hosts. This is one of the railroad companies which got forests from the national government without cost, in return for building a railroad, and which now prosper from sawmill activity.

Monday, August 22, was devoted to the company's sawmill, where redwood constitutes 70 per cent of the raw material. Here were cranes and transportation arrangements by which giant logs were handled like playthings. The first division into planks, 2-3 inches thick and very wide, was by a band saw. It was astonishing to see into what a multitude of small-dimension pieces the timber was gradually converted in the course of its journey through the mill. It was reported also that sawmill waste constituted 30 per cent of the measured volume of round timber. Twelve hundred men were employed, and their average wage was said to be 75 crowns (ca. \$15) per day. No labor unions! Seven to eight hundred logs were sawed per

8-hour day. They made 300 standards. The production cost was said to be 240 crowns (ca. \$47) per standard and the sale price varied between 350 crowns (ca. \$68) and 1,000 crowns (ca. \$193) per standard. The stumpage value of the round timber was difficult to make out.

Squared timber scaling in the forest

All these figures are calculated in dollars and board feet, or more accurately speaking, in thousand board feet, which is the unit used with respect to raw material and to felling for sawmills in North America. One board foot is a square, an English foot on a side and an inch thick. One thousand board feet, or half a standard, becomes then

1000

— = 83 cubic feet

12

When the tree's cubic volume is determined in the forest, or the logs are scaled, they calculate the volume to be the number of board feet in a squared timber which can be made out of the tree or log. The method is somewhat like "hoppus-feet" used for determining solid measure in Great Britain. A cubic meter of saw timber is mathematically $35.3 \times 12 = 424$ board feet, but a cubic meter of round timber by the American system is only 221 board feet, which is 6.25 board feet per cubic foot instead of 12. This method of calculation is to insure that the scaled volume will be only what is left after sawdust, slabs, etc., are removed by sawing. It is easy to perceive that the purchasers—the sawmill owners—support this method, which operates to their advantage. If anything like this should show up in Sweden, it is certain that the Royal Board of Private Forestry's scaling division would take the matter in hand, and require a more equitable system. It can be said that the pulp mills in Oregon for the

most part operate with chips from the sawmills, which perhaps gives some indication that these pulp mills do not need to calculate the stumpage value of their raw material.

Lumberjacks give an exhibition

After having devoted the forenoon to studies of this sawmill, using raw material of a size which at least in the case of coniferous trees is not found anywhere else in the world, and could hardly be obtained from a managed forest, the time after lunch was scheduled so that we would see the felling and transportation of this remarkable raw material. There was a large gathering of leading men and workers ("lumberjacks") of the Simpson Redwood Company, a company which among other things handles its felling by contract. All those contributing to the exhibition were introduced, and practically all had some comment in regard to the felling exhibition. This consisted of felling a 350-cubic meter (ca. 12,350 cubic feet) redwood approximately 3 meters (ca. 10 feet) at breast height. Everything was in readiness. Tractors with scrapers had leveled off the ground where the tree would fall. The huge undercut had been made accurately with the help of a square so that there would be no mistake in the felling direction and no splintering of the first log. The felling crew worked on a platform built around the tree, so located that the sawcut would be approximately at breast height of the sawyers. The felling cut was already largely completed. They had sawed around the trunk as far as the power saw blade would reach except for one segment. In the center of the cut, i.e., in the heartwood, no further sawing was needed. A single lumberjack finished the work. The tree leaned slowly, it groaned in the sawcut—a sound effect of indescribable character—and then the giant tree

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PROCEEDINGS THE AMERICAN FORESTRY ASSOCIATION VOLUME 3, 1884

Your Association is in need of an additional copy of the above publication. If you have such a copy available, or know where one may be obtained, we shall greatly appreciate your advising the Association at 919 17th Street, N.W., Washington 6, D. C.

A Beein' In the Ozarks

(From page 29)

father. Then the axe or the hand saw made it much more work than with the chain saw of today.

It was a half mile walk from the truck to a post oak tree to which a swarm had been coursed from a salt lick in a nearby pasture.

Moore sat down at the tree to cool off and plan his attack.

"It's a little warm for cutting bee trees today," he said. "You can't hurry in this business.

"I like to got stung to death once because I got in a hurry. I was working in a watermelon patch and my wife called me and said a swarm had settled down. She wanted to know if I wanted to hive them.

"I was all sweaty and the bees got all over me. I went up to the house and the wife got out all the stingers she could and washed me off with cold water. She asked me what I

was going to do with the bees and I said, 'Burn the hell out of them!'

"Then I sat down and cooled off and got in a better humor. I said, 'Well, they've never got the best of me before; I'm not going to let them start now.' So I finally got them in a hive."

Rested and cool, Moore toppled the second tree, which fell in the open without smashing the swarm's home in an open-ended dead limb.

The bees soon subsided enough for Moore to continue, bare-faced and bare-handed. Sounding the depth of their hive with his fist, he sliced the branch with the saw and used an axe to chunk it open like a watermelon.

With a pocket knife, he sliced off hunks of combs dripping with honey and handed them to observers.

Like a fisherman who doesn't eat fish, Moore declined to join the feast.

"I never eat the stuff," he said.

Moore dug a finger into his ear, complaining mildly, "Now there was no call for you to do that." When asked, he admitted, "I got bit."

Moments later, Moore found the queen and said, "Now they'll calm down and follow her into the keg.

"If we hadn't found the queen," he added, "or if she'd been killed in the fall, the bees would just stay around 'til they died and if you came back around, they'd sting you to death."

Moore said he'd return the next day to move the bees to one of a score of hives at his home.

He returned to the first bee tree and was happy to find a calmer cluster of bees around the queen.

Moore has been at the Drury Refuge about seven years and will retire soon. What'll he do then?

"Hunt bees," he said.

Curing the Tillamook Burn

(From page 37)

smoke began curling lazily skyward. Seconds later there was a flicker of flame. A crew of loggers less than 100 yards away raced to the spot with shovels, grub hoes, and axes. But already it was too late. Within minutes of the initial alarm the infant flame, caught up by the freakish wind, had erupted into a darting roaring monster that whipped over tinder-dry logging slash with the speed and fury of an atomic fireball. By nightfall the fire had thrust half a dozen greedy fingers into the wall of green timber that stood helpless before it. It crossed the crest of the Coast Range. Before it lay a solid sweep of primeval forest that rolled westward 23 miles in mountainous swells of earth and trees to within nine miles of the Pacific Ocean.

For 14 days this hungry tidal wave of flame swept at will across the defenseless blanket of forest. Rain and fog finally brought it to a halt. The toll was staggering. Behind it lay more than 240,000 charred and lifeless acres, twelve billion board feet of finest timber, more than had been cut and sawed by all the mills in the nation in the previous year.

Fires that broke loose in the same area in 1939 and again in 1945 boosted the final toll to 355,000

acres and 13 billion board feet of timber, enough to build 1.5 million average five-room U.S. homes. At present prices those lost trees if harvested and cut into lumber would have returned more than one billion dollars. To Tillamook County, whose population at the time was less than 11,000, it was a disastrous blow. Timberlands provided as much as 70 per cent of her tax returns.

The year of the first and most destructive of the three fires was a depression year. Timber companies, already hard pressed by declining log markets, let the burned and worthless land go back to the county for taxes. But there was one hope—salvage. In the dense coastal forests of the West, fires blacken and kill but seldom consume a tree. Under the charred surface sound wood remains. But insects and disease are quick to attack. To encourage private operators to move in ahead of these scavengers, Tillamook County offered long-term, liberal cutting contracts. Burdened with thousands of acres of orphaned land, residents whose livelihood depended upon wood had little choice.

With salvage operations established, the thoughts of a few turned to reforestation. Trees are Oregon's most valuable natural resource. Her

26 million acres of commercial forest land are the largest of any state with the exception of Alaska. They are the heart of a billion-dollar-a-year forest products industry. They provide jobs for 63 per cent of the state's industrial labor force, account for more than 75 per cent of all outgoing water and rail tonnage. Since 1938, Oregon has led the nation in lumber production. Obviously, a new generation of forest on the Tillamook Burn was needed to help safeguard Oregon's economic future.

But reforestation of such a tremendous area, encompassing such variations in soil and terrain, had never before been attempted. Land previously selected for restocking was in small acreages, easily managed and easily accessible. Many of the Coast Range peaks within the Tillamook Burn thrust skyward more than 3000 feet. Salvage loggers had removed millions of tinder-dry, fire-breeding snags, but millions more, unfit for salvage because of insects and diseases, were left standing. Property lines, blazed on trees or recorded on wooden corner markers destroyed by the fires, would have to be relocated. There were no accurate maps of the area. Until salvage operations began, it had been a wilderness region.

There was one man, Nelson S. Rogers, a native of the big timber country, who had been appointed Oregon State Forester in 1940, who saw in this tangle of uncertainties the raw material for a great new forest that would be planted and managed by man, a forest that would take root in the ashes of the old, one that would be protected from fire and endure forever. A dedicated conservationist, Rogers had for many years urged a rehabilitation program to restore burned and cut-over areas within the state. A few private lumber firms and a handful of civic and industrial leaders shared his view. But for the most part the general public was apathetic.

It was the Tillamook Burn itself—the third fire in 1945—that gave Rogers' dream the spark it needed.

This fire destroyed hundreds of thousands of young trees that nature had managed to start on her own. The Tillamook Burn was blacker, more dismal, and with less hope than ever. Editorial comment was wrathful and bitter. The people were beginning to realize what Nelson Rogers had known for so long—the Tillamook Burn was a dangerous and costly foe that had to be tamed.

A committee appointed to study the situation recommended a bond issue to finance a timberland rehabilitation project. Some 700,000 acres of state-owned burned and logged over land would be rehabilitated. The Tillamook Burn, one of the most glaring man-made scars on the North American continent, would be the guinea pig and prime target of the project. The state legislature placed the issue before the people on the 1948 general election ballot. They approved and voted the funds to finance it.

On the morning of July 18, 1949, the project was officially launched. Two months later, to the very day, Nelson Rogers died, a victim of Hodgkin's disease. But he died knowing that his great dream was started, was in good hands, and would be completed.

The Oregon State Board of Forestry, the agency in charge of the project, is following his original plan almost to the letter. But it hasn't been easy. Nursery facilities had to be expanded to provide the millions of young seedling trees that would be hand planted. It takes two years for a seed to grow into a seedling tree of the required strength and vigor to survive in forest planting. Hand planting estimates for the Tillamook Burn were placed at some

five million seedlings a year for the 15-year duration of the program. A trained 10-man planting crew can cover an acre of ground in an hour, planting 800 to 900 trees at a cost of about \$27 an acre. Aerial seeding is one of the major contributions of the Tillamook Burn to world forestry. One man in a helicopter can reseed 240 acres an hour at an average cost of only \$10 an acre. But not all areas of the burn can be handled in this manner. For example, heavy brush areas are not too favorable for direct seeding.

A survey of the burn area showed that 143,000 acres could be restocked by aerial seeding. Some of the rougher, less accessible spots were included. A total of 75,000 acres would have to be hand planted.

Expansion of nursery facilities was one of the minor problems that had to be taken care of by the rehabilitation planners. Getting an adequate supply of seed posed a difficult problem. Up to the time of the rehabili-

tation project, an order for a ton of tree seed was unheard of. Aerial seeding on the burn alone would require 40 tons of seed. Supplying the seed needs of the burn strengthened and expanded Oregon's small but important commercial seed handling business. In the fall of 1949, the Oregon State Board of Forestry managed to locate three commercial firms that could supply limited amounts of Douglasfir and other tree seed. The agency's files now list a dozen or more. The tiny seed are extracted from tree cones gathered from the latter part of August through September. The cones are picked by hand like fruit from a tree, or from piles stored on the ground by squirrels, and from trees felled by loggers. Cone buyers designate feed stores and other merchants as receivers during the harvest season. Housewives and children often gather cones as a part-time job to earn extra money. The harvested cones are delivered to the buyer's representative in the area. Payment is by the bushel. A bushel of cones will normally produce from a third to a half pound of Douglasfir seed. It requires about 40,000 seeds to make a pound. At the processing plant the cones are dried and passed through a revolving tumbler or shaker. The seeds drop free of the cones. After cleaning they are sacked and stored until sold.

Early in the program, foresters ruled that there would be no seeding or planting in an area until salvage logging had been completed and the danger of fire reduced to a minimum. The huge burn, with its millions of standing snags that because of rot and disease had no value as salvage, and its logging and fire litter, was a virtual powder keg. Once a fire got started, rain or heavy coastal fog were the only weapons that could halt it.

Foresters devised a containment plan. The burn was ringed and compartmented by snag-free corridors ranging in width from a thousand feet to almost a mile. Two hundred miles of primary corridors were charted on maps and all but ten miles of that total have been completed. In the process 1,300,000 snags have been felled and cleared from the corridors.

Even with these precautions, the burn would need constant watching. Three additional lookout stations have been built, all equipped with short wave radio. Five suppression crews, totaling 60 men, have been trained and equipped.

1962 Committee on Elections

Don P. Johnston, president of The American Forestry Association, has announced that Stanley G. Fontanna, Dean, School of Natural Resources, University of Michigan, Ann Arbor, Mich., has been named chairman of the Committee on Elections. Other members are Harry S. Mosebrook, Manager of Public Affairs, Eastern Division, Weyerhaeuser Co., 609 Fifth Ave., New York 19, N. Y., and Edward Woosley, Administrative Assistant to Sen. Henry C. Dworshak, Room 3109, Senate Office Bldg., Washington 25, D. C. Suggestions for nominations for directors of the Association to be elected by the membership may be submitted to the Committee on Elections by any member of the Association. The committee has the responsibility of nominating directors for 3-year terms starting January 1, 1962. This year the terms of eleven directors expire. Nominations for directors may be made by not less than 50 members of the Association in good standing, signed by the members submitting them. All suggestions and nominations should be addressed to the Committee on Elections, 919 Seventeenth Street, N.W., Washington 6, D. C., and must be received by the committee on or before September 1.

One hundred fifty miles of access roads have been built which, with the hundreds of miles of logging roads constructed by salvage operators, enable these crews to reach any point in the burn within 20 minutes. Water storage tanks and radio-equipped fire fighting tank trucks are strategically positioned, manned and ready for instant action.

Today the vast amount of plan-

ning, training, engineering, and other time-consuming work that had to be done before the rehabilitation project could shift into full gear is out of the way. The main task now is planting trees.

Some 80 to 100 years hence this inspirational reforestation program will mature into jobs and paychecks for generations of Oregon residents who inherit the land in the future.

Wilderness Trail

(From page 8)

there be a more beautiful sight in the whole world than the snowy Rockies?" The film answers the question itself.

Walt and his wife, Nancy, who is in charge of the cooking department, are the only trail riders with speaking lines. Walt never smiles broadly and never "emotes," but his voice rings true, as a western rancher's should. Riding on the horizon or weaving his way between rocky peaks, Walt looks like the modern counterpart of rugged Jim Bridger, for whom the wilderness is named.

The history of the region is depicted in the film, too, in an artistic manner worthy of the West. This involved a little detective work and doing. It started with the pages of Bernard De Voto's masterful work, *Across the Wide Missouri*, the story

of the fur trappers who came out of the mountains every summer to hold their Green River rendezvous at the base of our wilderness. The book was illustrated with paintings by Alfred Jacob Miller, who had been on the scene in Jim Bridger's own time. Could we possibly borrow any of these paintings for use in the film? Briefly, it developed that more than 200 of the originals were in the Walters Art Gallery in Baltimore, although the copyright for reproduction was held by the University of Oklahoma Press, which had published a fine book of Miller's paintings. "As a member of the Wilderness Society," responded Savoie Lotinville, editor of *The Press*, "I hasten to approve the application for use of the Alfred Jacob Miller water colors in a motion picture on the

And these tiny seedlings now emerging from the ashes of disaster will return to the people of Oregon 25 million dollars a year in cutting fees from annual growth rate alone. If those future Oregonians show the same reverence for conservation as the present generation. The Tillamook will be a monument to courage and conscience for as long as man has need of the things of nature.

Wind River Wilderness to be produced by the U.S. Forest Service."

Thus, several of these beautiful paintings done more than a century ago enliven the "Wilderness Trail." They show great herds of wildlife, the lakes and rivers of the upper Rockies, and the Green River rendezvous in the cottonwood flats. We also had borrowed a color transparency, from the magazine *American Heritage*, of Albert Bierstadt's massive painting, "Rocky Mountains," of a scene at 11,000 feet which our trail ride visited. General Fremont, in his great expedition of 1842, had described this place as "a concourse of lakes and rushing waters, mountains of rock, dells and ravines of the most exquisite beauty, all kept green and fresh by the great moisture in the air and sown with brilliant flowers." But, like some of my best lines in the script, the Bierstadt painting ended on the cutting room floor.

The Forest Service commissioned a score of original music, a lively blend of western themes, performed by an unusual five-piece combination of accordion, clarinet, guitar, bass, and vibraphone. The music, the people from everywhere come together as Trail Riders, the horses on the rocky trail, the soft, genuine narration, and the scenery of the vast Wind River country—these are the components of the film. Everyone who sees it is more than likely to agree with the concluding statement of Walt Lozier, when he says, "There are the mighty peaks, Fremont, Sacajawea, Gannett, tallest of all, queens of the natural world in which our Trail Riders have lived for two weeks. They may never come here again, but everyone of them will understand himself and his own world better for the experience. I have made a hundred pack trips, or more, into this country and I feel it every time. And I hope this portion of America will be there always, just as it is now."

Tree Planting in Europe Hits New High

Rome, Italy—An increase in new European forest plantations outside the existing forest was announced during the 11th session of the European Forestry Commission at the Rome headquarters of the Food and Agriculture Organization (FAO). It was reported that the 1960 figure of 60,000 hectares (nearly 150,000 acres) almost doubled the area reported three years ago.

A general upward trend in areas of forest extension, forest restoration, and new plantations, with over-all afforestation increasing to a peak of 350,000 hectares (nearly 875,000 acres) for 1960 was reported as one result of the rising demand for wood and wood products in Europe.

Other measures to meet this increasing demand were discussed such as higher imports, particular-

ly of tropical woods, improved silvicultural practices, and greater utilization of waste and of small-sized wood. Germany reported a 30 per cent increase in fibreboard production and a 74 per cent increase in particle board production.

France reported that more than a million cubic metres of hardwood were used in pulp and paper production.

The need for large scale and continuous forest extension and rehabilitation in Europe was stressed at the meeting. One paper quoted FAO's Mediterranean Development Project to the effect that six million hectares (nearly 15 million acres) of forest must be created and 10 million hectares (nearly 25 million acres) of existing forest improved over the next 20 years in the Mediterranean area.

Control of Destructive Wildlife

(From page 27)

harvest by man is in order, and should be carried out to avoid waste. Such harvest will accomplish a useful biological purpose which will otherwise be accomplished by Nature."


While such a statement is axiomatic for most situations, it need not be applicable to our extraordinary national parks where methods and policy must be consistent with the National Park Service Act of 1916. Nevertheless, I have no doubt that the majority opinion of wildlife biologists favors a regulated harvest of surplus populations by the sport hunting portion of the public. Last year, the Association of Midwest Game and Fish Commissioners adopted the following resolution (as reported in the *Conservation News*):

"The association said present control methods used by the National Park Service in controlling surplus game animal herds in national parks and monuments is not consistent with the objective of preserving natural flora of these areas and that such methods are objectionable to the public. Issuance of limited licenses to hunt surplus animals under regulation of state wildlife conservation agencies would better accomplish the control needs of these areas and provide more recreational use of these areas by the public."

It is not my intention to question the integrity of the members of the association. Without a doubt, their primary purpose is to make the maximum recreational use of a wildlife resource. As professional biologists, they recognize the importance of control in preserving the natural flora and fauna of our national parks and monuments. Yet, I cannot help but believe the quoted references to the public actually refer to the sport hunting segment of the public; and, that a much larger portion of the total public would find sport hunting in these areas objectionable for scientific, aesthetic, and emotional reasons. The last sentence of the resolution clearly portrays the desire of state wildlife conservation agencies to regulate the harvest of wildlife in national parks, and the benefit from license monies obtained from such a harvest. Perhaps these state agencies have some justification for their desire to assume con-

trol of the wildlife resource within those areas administered by the National Park Service, but the enabling act of 1916 clearly assigns this authority to the Secretary of the Interior and I doubt that it may be delegated without passage of additional legislation.

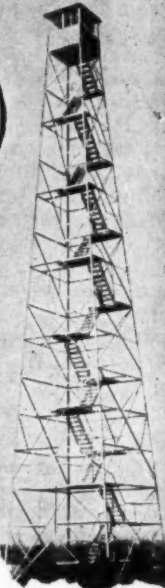
Before further consideration of sport hunting as a means of control, we should examine what is meant by the word hunting. Hunting is commonly defined in dictionaries as "the act of pursuing wild animals." Many of us practice what I choose to call *non-depletive hunting*, in which our pursuit of wildlife fails to reduce the population of the hunted. The sight-seer, artist, photographer, naturalist, and many others are non-depletive hunters in our country. *Depletive hunting* is the act of hunting which effects a temporary reduction in the population of the hunted through a physical harvest. Every wildlife biologist will agree that depletive hunting is essential to biological control of prey populations. The lack of depletive hunting has aggravated the



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wildlife problem in national parks and monuments. Depletive hunting, however, may be usefully subdivided into three types, all of which are important to a complete understanding of the control problem. They are:

1. *Sport hunting*: The pursuit and harvest of wild animals with recreation as the primary purpose.

2. *Obligate hunting*: The pursuit and harvest of wild animals in which the hunter depends upon the hunted for survival.

3. *Prescribed slaughter*: The pursuit and harvest of wild animals in which the primary purpose is control of a destructive wildlife population.

Permit me to consider each of the kinds of depletive hunting in greater detail and in relation to our central problem.

We are all familiar with sport hunting, and many of us are participants in this fine and stimulating form of outdoor recreation. Sport hunting will be with us far into the future as a primary recreational use for most of our wildlife habitat, supplying trophies, meat, and sport. It will remain an indispensable tool for the wildlife manager in his work of securing a maximum annual harvest of the hunted. Through the regulated use of sport hunting, populations of prey species can sometimes be prevented from becoming destructive agents over most of their range. But sport hunting cannot be practiced in national parks and monuments because the killing of wildlife for sport is prohibited by law on this small, but exquisite, portion of our publicly-owned lands.

Some would desire legislation permitting sport hunting in national park areas, justifying their demand by the increased recreational opportunity for sport hunters and greater use of the wildlife resource on these lands. They say, if depletive hunting is to be done on lands administered by the National Park Service, let the sport hunting public do it.

Aside from the fact that national parks and monuments remain inviolate sanctuaries, save for the control of nuisance and destructive wildlife, another opposing factor warrants consideration. When sport hunting, man becomes a predator replacing such animals as the wolf and mountain lion. The prey then regards man as a predator and treats him with a wariness unsuited to the man-wildlife relationship sought in the national parks. A wild animal may be "natural" in every respect, yet display only curiosity and the

usual amount of caution toward man when it has never learned to associate the human with a threat to life. By permitting sport hunting in national park areas, the non-depletive hunters, who make the greatest use of the wildlife resource, would be deprived to a large extent of their recreational viewing of wildlife. The experienced sport hunter of mountain goats can testify to the difficulty of seeing these dwellers of the high country, yet many visitors view them annually from Hurricane Ridge in Olympic National Park and other such areas where these animals are not subjected to human predation. This is a primary motive for not permitting sport hunting in national parks and monuments.

Our second kind of depletive hunting, *obligate hunting*, definitely is a part of the natural community and should be encouraged in most situations. An obligate hunter may be defined as one who depends upon the hunted for survival. The wolf-moose relationship on Isle Royale National Park is an excellent example. There a population of obligate hunters, the wolves, is helping to control the over-abundant and destructive moose population. Predator-prey relationships of this nature are ideal and best fit the national park concept of maintaining wildlife populations in a system of natural checks and balances. We should recognize that in certain situations and places man becomes an obligate hunter, yet I know of no national park area where a human population depends upon the depletive use of wildlife for survival. If such a need is present or should develop on these lands, federal funds may be used to meet the human requirements for meat or fur.

By encouraging predators, the National Park Service will undoubtedly run into problems of wide-ranging obligate hunters (the wolf, mountain lion, and grizzly bear) who roam outside of the boundary lines and occasionally kill domestic stock on adjoining private lands. It seems to me the wise course might be continued protection of these infrequently destructive animals, and payment to the property owner for damage incurred. It is conceivable that the predator's value as a natural control far exceeds the cost of the few domestic animals it might kill in a lifetime. Also, let us not forget that it is the function of the National Park Service to maintain and protect these large predators which have met extermination over most of their past

range. Of course, the rare obligate hunter that becomes a rogue must be destroyed for obvious reasons, whether within or without the park area. Obligate hunting, by predators other than man, has been proven by time to be an effective means of natural control and should be encouraged, protected, and increased wherever possible in areas administered by the National Park Service. Only when threatening the survival of a nearly extinct prey population, can obligate hunting by wild animals be justifiably curbed in our natural museums.

Prescribed slaughter, the third type of depletive hunting, is a harsh and repugnant expression, with many unpleasant overtones. I have chosen it because the need for control by man reflects a disturbed wildlife community in which the disturbance probably resulted from human mistakes in management. Prescription implies the scientific concoction of a medicine (treatment) which will help to correct a condition of poor health. Slaughter is the killing, or butchering, of animals for consumption by the human market. Prescribed slaughter, then, is a technique employed by the wildlife biologist to achieve control of a destructive wildlife population where sport hunting is not permitted or cannot do the job. It is a messy, offensive, but sometimes necessary form of depletive hunting in which sport, or recreation, is not a motive for the killing. The meat and fur obtained, when of value, is sold on the market and the proceeds help to pay for the harvest.

This method has been in use for nearly a decade at Yellowstone National Park, where nearly 8,000 elk have been killed within the park by National Park Service personnel. Along with a large hunter harvest outside of park boundaries, live trapping and transporting to other areas, and winter losses due to old age, disease, and starvation, prescribed slaughter has helped to bring the wintering elk herd down to such a level that partial control has been achieved and aspen (an important elk food) is beginning to show reproduction for the first time in over thirty years. We may hope for the future development of control techniques more acceptable, aesthetically, than shooting of any kind. After all, if execution were the only means to control the human population, we would be making even slower progress in that direction than is the case today. But since we have control

problems demanding immediate attention and correction, the crude and disagreeable prescribed slaughter is a proven and effective means of getting the job done.

We have now completed the cycle and are back at an earlier point with the question: If you are going to kill wildlife species that are valuable as game animals, why not permit the sport hunter to do the work and make additional recreational use of the wildlife resource in our national parks and monuments? There are several reasons why, if depletive hunting is necessary to achieve control in these very special national park areas, the reduction should be accomplished by prescribed slaughter.

(1) Foremost among my objections is the already discussed threat to the non-depletive use of wildlife that sport hunting represents.

(2) Sport hunting, also, is not always especially effective as a means of control. A few highly skilled men who intimately know the animals to be harvested and their environment can do a far more rapid, efficient, and humane job of reduction than a far larger number of typical hunters. And most important, trained National Park Service personnel should be able to complete the reduction with as little disturbance as possible to the wildlife of the region.

(3) As a sport hunter, I question how the representative public sport hunter is to be controlled in such a manner as to shoot only the designated animals, never firing at any other wildlife, or public property, that may cross his path. This problem of complete control of the sport hunter has never been solved, even in our most highly managed public hunting areas.

(4) While prescribed slaughter may be expensive, I doubt if it requires any more men or money than would the control of sport hunters, if control could be attained.

(5) I have a fear, admittedly biased, that the many pressure groups would jump upon sport hunting in national parks as an opening wedge for further exploitation of the valuables contained within our national park system. Local businessmen would hear cash registers ring gaily during the off-season; national arms and equipment companies would note an increase in sales; state wildlife departments would gain additional license revenues and, possibly, extended jurisdiction; multiple use purists would proclaim a victory; and nearby sport hunters would

move into new hunting country (the national parks and monuments). All of these segments of society would probably be in favor of public shooting in these areas for their own reasons and interests. I sense a real danger in using the control of destructive wildlife populations as an opening of the door. I would hope that all of the people would be permitted to decide, through Congress, if public shooting of any kind should be practiced in our national parks and monuments.

(6) The National Park Service Director, Conrad Wirth, has written that sport hunting is prohibited by law in the areas about which we are concerned. I fail to see how the public can be used in any depletive hunting program without recreation being considered a primary motive (of the hunter, if not the administrator) and thereby making the use of the public illegal.

(7) For purely aesthetic reasons, I want to visit wild country where I can observe the wildlife dwelling therein not as a killer, a predator, but as an interested bystander. There is, as far as I am concerned, enough land outside of the national parks for my recreational needs as a sport hunter. But areas where the wild animals need not fear man are becoming very scarce, indeed!

No one answer exists to the titled question. There are as many problems of control as there are places where man has disturbed the natural community by his use and abuse. Where populations are overabundant, a lowering of fecundity through hormonal medication would be a nearly ideal solution when obligate hunters are not able to do the job. Techniques of this nature are near at hand and within the reach of present knowledge. Prescribed slaughter should be considered only a coarse, temporary technique to be replaced by more refined and aesthetically acceptable methods. Sport hunting within those lands administered by the National Park Service should not be considered as a tool of management. Its inherent dangers outweigh the values to be gained through its use. However, control of overabundant destructive wildlife populations must be achieved. Research dollars are needed to find better techniques and to improve the effectiveness of existing methods. The goal of adequate control can be obtained without resorting to the unknowns and dangers of sport hunting in our most treasured wildlife sanctuaries.

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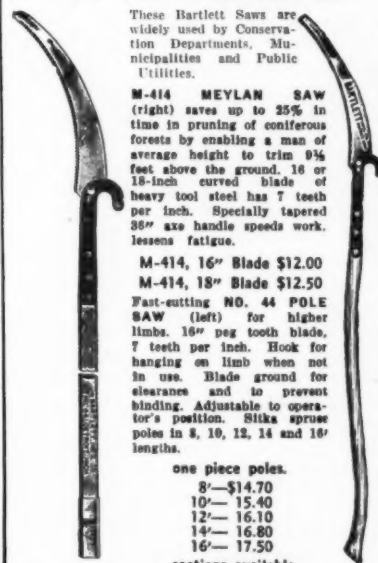
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Pioneers on the New Frontier

(From page 23)

der the influence of glowing promotions of unethical land locators and speculators who took advantage of public ignorance of a clutter of complicated laws and regulations by which the public lands were still administered. "In case after case," the Secretary of the Interior has said, "the government has actually been doing the public a disservice by accepting for processing types of non-mineral applications which were virtually doomed to failure and rejection."

During the moratorium the Bureau of Land Management intends to process the more than 40,000 applications and petitions now on file for non-mineral public lands. A great many of these applications have been pending for three or four or more years.

Free land, homesteads, squatters rights are part of the tradition of America. The writer believes it is high time officially to recognize, however, that most of the remaining public domain lands in the West are not suitable for private ownership, and that they should be kept in rather permanent land management areas. Certainly, they should not be left in the present limbo of tentative retention pending "disposal in accordance with . . . classification under applicable public land laws." This is a narrow interpretation of Section 7 of the Taylor Grazing Act. A broader interpretation which would permit rather permanent retention of most of the land for proper management seems just as valid. In case there is doubt, legislative sanction should be sought. The stabilization of public tenure is important for only then will the substantial public investment in the management, protection, and development of public lands be really warranted.

There are about 178 million acres of public domain land in all of the western states that are the wealth and heritage of all Americans. Table on page 23 shows where these lands are and how they are administered.

Providing the Tools for Management

Much remains to be known about these lands. Even such simple things as where they all are and how they are presently being used may not be readily determined in the states which still have old and tattered

land office records. Therefore, just as soon as possible modern land status records should be developed for all of the public land states. Such records are now available in Arizona, New Mexico, Utah, Oklahoma, and part of Alaska. According to the plans of the previous Administration, they were scheduled to be available in Montana in 1962, in much of California in 1963, in Colorado in 1964, and in Nevada in 1965. The modernization of land records in Oregon, Wyoming, Idaho, and Washington were scheduled for subsequent years. They need to be done earlier, however, in all of the states which now do not have them. This is part of what the President meant in his special message to Congress on natural resources when he asked the Secretary of the Interior to "accelerate an inventory . . . of the nation's public domain." The records and their consolidation into maps of the public lands are needed as soon as possible in all states to facilitate the land use planning that is needed for proper land management and development.

There are also serious inadequacies in basic resource data about the range and forest lands of the public domain. The special message of the President recognized this for he directed the Secretary of the Interior to "accelerate an . . . evaluation of the nation's public domain." Except for the land classification studies made in the Missouri River Basin in recent years, little of the public domain has been systematically evaluated as to its land use suitabilities. There is urgent need to extend resource evaluation surveys by the Bureau of Land Management so that it may effectively carry out its management responsibilities. They are needed in connection with other activities the President wishes to accelerate on our public lands—"the installation of soil conserving and water saving works and practices . . . the revegetation of range lands on which the forage capacity has been badly depleted or destroyed."

It is now exactly 25 years since the last comprehensive survey of the western range was submitted to the Congress. This report, "The Western Range," printed as Senate Document No. 199, revealed widespread public neglect and aggravated depletion of our range lands. It provoked

public attention in the midst of our worst drought years to remedying the range problem. Since then a great deal has been done by range managers and range users to improve the grasslands of our western states but, more important, the return of better rainfall conditions fostered revegetation. A recent extensive survey of the federal range, however, revealed there is still serious depletion of cover on millions of acres.

It is now necessary to see how effective the remedies have been on all range lands, public and private, and what remains to be done. It is suggested that the Bureau of Land Management, the Forest Service, and the Soil Conservation Service collaborate in executing a new comprehensive survey of the western range, each on the lands under its jurisdiction, using identical survey standards and methods. Such a survey should consider all the physical and economic factors affecting the stabilization and utilization of the land. Many members of Congress have been actively seeking such a survey.

As a part of the inventory and evaluation of the nation's public domain, the Bureau of Land Management should also determine the location and quality of its mineral holdings. As soon as possible this work should be broadened to include acquired lands; lands for which the government has conveyed the surface but retained the mineral rights as in stockraising homesteads, small tracts, and private land exchanges; and the lands withdrawn and reserved for various public purposes. Such determinations are essential in planning for more effective utilization of our public lands. The forest resources, except in the forest districts on the public domain, should be evaluated as part of the survey of the western range. Within established forest districts, more comprehensive surveys should be made of the timber resources.

In order to achieve good land use there must be more study and choice and less petition and pressure, just as in achieving good government otherwise. In order to do this there must be better knowledge not only of the available resources but also of the various land use requirements. Adequate state land use plans involving the public lands should, therefore, be developed just as soon as possible

from the modern land status records being developed by the Bureau of Land Management, the various resources inventories presently available, and determinable needs for land for economic growth and social progress. Broad determinations as to land use can generally proceed now on the basis of information presently available in the states with modern land records. The refinements may be made later as better data becomes available.

Such studies should be conducted by the Bureau of Land Management. They should be guided by a land use committee in each state made up of representatives from the major federal and state land managing agencies and state and community planning bodies. Special funds need to be provided to the Bureau of Land Management to enable it to obtain the staff necessary to do this task.

The execution of the above studies will provide the necessary guides for conversion of the Bureau's lands program to a controlled and stable operation. It will also indicate after completion of a number of them, just what kind of land laws are necessary to afford the most effective present day public and private utilization of the public domain. This would enable the simplification, coordination, and modernization of the federal land laws so necessary for responsive land management under the changing needs of the nation. Revisions which should obviously be made, of course, should be sought in this Congress. There is no sense any longer in trying to meet present day land needs with out-dated and unworkable laws.

Priorities of Necessity

We have mentioned that certain priorities should be generally followed in meeting the future land needs of America. They cannot be hard and fast, since interests in land are not manifested in any regular order, and needs change with the passage of time.

First Priority—Federal Needs: First attention should generally be given to fulfillment of the public land needs of the nation as a whole. To begin with, this means satisfying the present land needs of the federal government. On June 30, 1960, there were 7,200,000 acres involved in withdrawal applications for public lands in the West on file in the Bureau of Land Management from various federal agencies. In gross figures, if these pending withdrawals were all met in their entirety, and if these lands are

not in part, at least, already withdrawn, there would be 170.8 million acres of public lands left for consideration.

There also are many land restoration requests pending before the Bureau from federal agencies, however, which, if all met in their entirety, and if these lands are not in part, at least, otherwise withdrawn, would have the effect of adding 2,500,000 acres to the national land reserve. This would mean that there are really about 173.3 million acres of public domain lands in the western United States.

A withdrawal review program has been in progress in the Bureau of Land Management for a number of years. Under this program withdrawals and reservations of public lands are being reexamined to determine which may be eliminated, reduced in size, or modified to allow for additional land uses. This program is incomplete but the work to date indicates that possibly 3-5 million acres of land may be eliminated from withdrawals and reservations without injury to the public interest and added to the public domain lands in western United States available for further land use development, thus making it about 178.3 million acres.

Future public land needs of the nation not in evidence in applications for withdrawal must be taken into account. Fortunately, a much clearer picture of these needs is emerging from the various long-range programs recently prepared or in process of preparation by the major land holding agencies of the United States such as those of the National Park Service, the Forest Service, and the Bureau of Sports Fisheries and Wildlife. Also important is the review of present and future federal needs for outdoor recreation resources being done by the Outdoor Recreation Resources Review Commission which is to be presented to the Congress by September 1, 1961. The study of *California Lands—Ownership, Use, and Management*, by The American Forestry Association, will be very useful in considering such needs in California. The future national land requirements may be met by withdrawal and reservation or by classification under Section 7 of the Taylor Grazing Act.

At present, there are no consolidated estimates of the federal land requirements and exactly where they are needed. It ought to be possible in the next year or so, however, as part of the state land planning pro-



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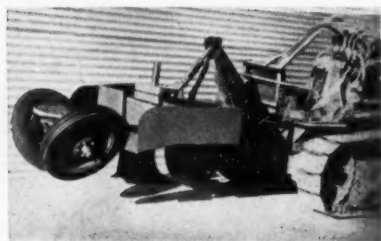


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ess to ascertain these needs and proceed to meet them. Not all of the land needs, of course, will be met from the public domain. Just as an outside estimate, it is thought that possibly as much as 10 million acres may be affected by these programs by 1980.

Second Priority—State Needs: It is necessary first to fulfill the state land grants still outstanding. This amounts to 650,000 acres in the western states, exclusive of any remaining school section lieu selections.

Next, the present and future land needs of the various western states for state forests, game reserves, and state parks need to be met. In addition, land for natural areas, hunting and fishing, picnicking and camping, winter sports, and swimming and boating, need to be determined and provided for as soon as possible. Increasing population, personal income, leisure time, urbanization, and vacation travel are aggravating the necessity to afford lands for all these purposes from the national land reserve. Vacant and unreserved land most suitable for these uses may be classified by the Bureau for lease or purchase by state governments under the Recreation and Public Purposes Act. Land is made available under this act at reduced price under conditions which insure its use for public purposes. There is urgent need, however, for liberalization of its provisions. States may also seek to satisfy their land needs by exchanges under Section 8 of the Taylor Grazing Act. There are no estimates of public domain land acreage which may become involved in such transfers, but it seems reasonable to presume it might involve five million acres by 1980.

Third Priority—Community Needs: It is believed that the public interest would be served by meeting the land needs of local governments. Their

interest is especially high in acquisition of recreation land. Local agencies are beginning to realize that unless the lands and waters needed for public recreation and open space are acquired now, it may be too late. There is growing competition for attractive lake shores, wild coastal areas, accessible woodland, and peripheral open space about urban centers. They also realize that there is high cost in waiting to acquire such areas and that they must act now.

Vacant and unreserved land most suitable for local public recreation areas may also be classified by the Bureau of Land Management for lease or purchase by local governments and nonprofit organizations under the Recreation and Public Purposes Act. Here again liberalization of the provisions of this Act would be in the public interest.

A new concept of public land disposition has been proposed to the Congress—the "Public Land Urban and Business Sites Act"—which would enable transfer of land in aid of community growth. The proposed bill would provide three ways of making public lands available for residential or commercial purposes. The land could be sold to communities or land could be sold to private interests at public auction. Both would facilitate controlled community development through planned residential subdivisions and organized commercial or industrial districts. Private interests would have to develop the land according to an acceptable plan. Lands could also be subdivided by the government for lease or sale in small parcels for individual residential or business use.

The amount of land which might be involved in these transfers is impossible to determine presently but it is conceivable that it might aggregate 1.5 million acres in the next 20 years.

Fourth Priority—Needs of Management: Classification of much of the public domain land in the West as *land management areas* for either permanent or temporary purposes is urgently needed to conserve them.

1. Permanent Land Management Areas:

The land management areas which are more or less permanent should receive more or less sustained resources management:

	Estimated Acreage
Grazing district lands	140,000,000
Oregon and California Railroad and Coos Bay Wagon Road re-vested grant lands	2,600,000
Forest district lands	1,500,000
Multiple use lands	4,000,000

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These lands should be administered in accordance with principles of sustained yield and multiple use management. In multiple use areas, balanced usage especially will be designed to preserve extensive recreation, wildlife, watershed, and scenic values.

2. Temporary Land Management Areas:

The temporary land management areas should receive long-range or short-range management.

20 Years	Acres
(1) Destroyed forest land outside grazing or forest districts needing special practices.....	400,000
(2) Critical water supply areas.....	500,000
10 Years	
(1) Depleted range land outside grazing districts.....	2,000,000
(2) Lands deferred for settlement and development.....	4,000,000

Fifth Priority—Private Needs: Whenever appropriate, considering physical, economic, and social conditions, public domain lands, generally those not included in land management areas or set aside for federal, state, or local government purposes, should be classified for lease and disposal under the land laws in response to present and future applications filed at the land offices. Such land should be classified either in response to public nomination of areas which should be developed or by the Bureau of Land Management on its own motion. In either case the classification must be on the basis of adequate land use plans. At present, there are about 1,500,000 acres in individual unperfected entries and selections. Over the next 20 years, it is estimated that about 5,000,000 acres of public domain lands in the West should be disposed of to private individuals in pace with the economic growth of the nation.

Principles for Operations

Land classification surveys necessary to guide operations should be made both on an extensive and an intensive basis. In the land management areas the surveys should generally be extensive, for here the main purpose is to identify land having suitability for special use such as public recreation areas or small tract cabin sites or potentialities for improvement of the pattern of ownership through land exchanges with private or other public land holders.

Comprehensive land classifications should be made in areas generally designated for disposal. Such areas should generally be those in highest need for private and public land development or those in which the public

land is so scattered it cannot be either effectively or economically managed as government land.

In the areas designated for disposal the Bureau of Land Management should do most of its business much like a realtor for the nation. Most land transfers in such areas should be made on a competitive bid basis. The land areas which are classified for short-range management in the interest of deferred economic development in order to minimize public expense should be reexamined about 1970 for such adjustment as may then be desirable.

The Secretary of the Interior in a major land conservation policy has set up a "public interest test" for all transfer of land out of federal ownership. It bars agricultural land classification under the land laws when the lands are more valuable for other uses or when such classification would not be consistent with national agricultural objectives. It maintains that "the government must receive a full return for its property in terms of money or other values. No party to a transaction with the government should receive a windfall."

In view of the crisis in outdoor recreation in America, it is urgently necessary to improve the quality and quantity of public recreational opportunity on the public domain to be retained in federal ownership. In action terms this means to: a) establish in suitable areas and in accord with user demands various public recreation areas; b) improve public recreation sites in order to afford pleasant and safe enjoyment; c) arrange for access to areas of public land having present or future recreational value; and, d) cooperate with urban centers in using vicinal public domain to provide adequate open space for recreation and other uses.

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preceded by comprehensive land planning to guide land classification actions. Public needs are then given greater priority for the nation's remaining lands. Large savings should also be realized. The processing of the flood of applications and petitions filed each year in the land offices of the Bureau of Land Management which more frequently than not were in partial or total conflict was extremely wasteful of public funds.

The designation of the temporary land management areas in order to prevent the high social cost of premature entry or selection of public domain land in the West would have an important by-product—the realization of public profit in any land sales due to the increase in land values as a result of gradual regional development. This could be obtained without in any way impeding any desirable growth. This is simply a way to zone the land for more advantageous development at a later time.

There is much to be done in adjustment of public land holdings in order to manage all public land most effectively. This may be accomplished by land exchanges under the Taylor Grazing Act, withdrawals and restorations, and by legislation by the Congress. First attention should be given to achieving optimum land patterns in areas receiving intensive federal management—national parks and monuments, national wildlife refuges, and national forests. In any exchanges, equal acreage or equal value of land should not be the main criterion. The main one should be how the public interest may best be served.

with the left hand and pressing with the heel of the right, the bow may be bent and the string pushed up with the thumb and forefinger until it drops into the slot or "nock," as it is called.

To unstring the bow, the process is the same except that the string is slipped out of the nock.

In shooting the bow, stand with your left side facing the target and with the bow in your left hand. (Reverse these directions for left-handed archers.) Hold the bow horizontally and take the arrow with your right hand. Lay the arrow across the top of the bow (the string should be to-

Considering Its Results

In concluding this exploration, we need to consider its results. There are too many imponderables involved in the changes in public land policies here considered to do more than speculate about their effects. The following tabulation consolidates the educated estimates used in considering the shifts in land tenure and land use which may result from a more positive approach to the management of public land in western United States.

	Acres
Public domain land	178,000,000
—Withdrawal requests	7,200,000
	170,800,000
+Restoration requests	2,500,000
	173,300,000
Withdrawal review restorations	5,000,000
	178,300,000
Future federal needs	10,000,000
	168,300,000
State land grant obligations	650,000
	167,650,000
Future state land needs	5,000,000
	162,650,000
Future community needs	1,500,000
	161,150,000
Fulfillment unperfected entries	1,150,000
	160,000,000
	Acres
Grazing district lands	140,000,000
O and C lands	2,600,000
Forest district lands	1,500,000
Multiple use lands	4,000,000
Depleted range land outside grazing districts	2,000,000
Destroyed forest land outside grazing districts	400,000
Prevention of over-drought ground water	500,000
Prevention of premature entry	4,000,000
Individual entries and selections	5,000,000
	160,000,000

Archery, Anyone?

(From page 6)

wards you) with the cock feather (the one that is colored differently from the others) facing upward. Nock the arrow by fitting the string of the bow into the slot at the top of the arrow. Grasp the arrow at the nock with the thumb and forefinger of the right hand.

Now swing the bow to a vertical position and draw the bow-string, along with the arrow, gently back.

The bow rests in the base of the thumb with the fingers curled loosely about the hand grip. Keep the left arm straight but not stiff.

Draw your right hand back until the thumb rests against your right

jawbone. The string and arrow are being held by the first three fingers of your right hand.

The next step is gently (without jerking or pulling) to release the three fingers, thereby freeing the string and shooting forth the arrow.

Do not move your bow arm until the arrow has left the bow so as not to deflect your aim.

In aiming, use the point-of-aim method. To do this look over the point of the arrow with your right eye and line it up with the center of the target. Then release the arrow. Trial and error will give the point-of-aim for various distances. At long distances the trajectory (flight) of the arrow is a long high arc and the point-of-aim is usually somewhere above the target. At short distances, the trajectory is practically flat and the point-of-aim is either straight at the target, below the target or somewhere down on the ground.

Scoring is 1-3-5-7-9, starting from the outer ring on the target and working in toward the bull's eye.

In drawing arrows from the target, the back of your left hand should be

placed against the target in such a way that the arrow comes between the first and second fingers. Grasp the arrow close to the target with the right hand and gently pull the arrow from the target.

Always be careful not to crush the feathers on your arrows.

Always remember that archery is a great sport and wonderful fun, but it is also a modern form of ancient warfare. So be sure to follow the safety rules. Here are some of them:

1. A bow must never be pointed at anyone.

2. The only safe place is behind the shooting line.

3. Arrows should be inserted, or nocked, only on the shooting line and pointed only at the target.

4. Never shoot an arrow straight up into the air as it may hit someone.

5. Use only target arrows.

6. Never go hunting lost arrows without propping your bow against the target so that it will be seen by anyone about to shoot.

Always be courteous on the archery range. Enjoy the sport of archery safely. And last, but not least, be a good sport.

Island Wilderness

(From page 35)

facilities for trailers. Stone cooking ranges in sheltered log kitchens, park wide sanitary facilities, beach side barbecue pits are present realities—all without disturbing the "frontier" appearance of the park or the profusely blooming wild flowers. There are more varieties of the latter than in any other northwest area, excepting Whidbey Island, in lower Puget Sound (not part of the San Juan archipelago).

Recreation isn't limited to the actual sea.

The beaches of Orcas and the other San Juans are studded with agates, often of gem quality, free for the finding. Unique driftwood shapes from Pacific rim countries pile on the beaches during winter storms, and vacationers cart it home in loads. Japanese glass fishing floats are another beachcomber "find" often delivered by the Pacific.

The last ferry stop after leaving Orcas Island and before crossing the water boundary into Canada and Sidney is Friday Harbor, on San Juan Island. The harbor is a port-of-entry for States-bound boats and travelers; a Coast Guard air-sea res-

cue station is also located here, as is a University of Washington oceanography post, largest on the west coast.

San Juan is the site of the "Pig War" which threatened war between the U. S. and Britain (1859-1872). The international boundary had not been established, and both nations claimed the archipelago. An American settler shot a British porker raiding his potato patch. The British sent Royal Marines, who fortified the north end of San Juan. The Americans landed infantry companies under Captain George Pickett (of Gettysburg fame) and fortified the sound end of the island. Cool heads on both sides prevailed, and the "Pig War" deteriorated into social visits among the troops, until final arbitration divided the San Juans (American), from the Channel Islands (British), in 1872.

Vacationers will remember their San Juan visit, and particularly the stay in Moran State Park. Here are wilderness, and history, and the lusty recreations of the last American frontier—short of Alaska.

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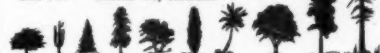
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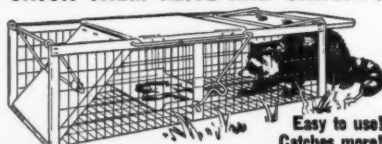
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The Story of Wahkeena

(From page 31)

One of the amusing sidelights that greets the observing visitor as he strolls around the grounds is the outside bathroom which Mrs. Warner had constructed. To accommodate the guest who wanted to enjoy the scenery and take a bath at the same time, Mrs. Warner had a complete bathroom installed—including up-to-date indoor fixtures and even a shower. Favoritism toward her own sex is quite evident, though, when one views the men's facilities.

While interested in letting the public see this scenic wonderland, Thomas and other historical society officials are trying to follow the wishes set forth by the late owner in her strange will.

"We don't feel Wahkeena is a place for picnickers or park-goers. Anyway, there is a place for picnics and fun at nearby Hocking Hills Park. Wahkeena is open to those who want to enjoy what Mrs. Warner devoted so much time, energy, and money toward building—the enjoyment of nature and its beauty," one state official said.

Paths have been cut to permit persons to walk almost anywhere among

the 90 acres of gardens, lawns, and wooded sections. The estate caretaker, who still cuts and trims nearly three acres of lawn area with an old-fashioned hand mower, says, "Most of my work in the spring and summer is just keeping the trails clear so people can look at all parts of the estate."

Thomas reports that Wahkeena is visited regularly by garden and bird groups, members of the Audubon Society, university and high school classes, and other interested persons who come "just to see if such a place really exists."

To see or visit Wahkeena, a pass must be obtained from the director of the Ohio Historical Society. Tourists can write or call Director Zepp at the Ohio State Museum to arrange a visit to the estate.

What was Mrs. Warner like? "She lived in a world all her own, surrounded by all the things she loved. She liked people, but even more, she loved Wahkeena. Just take a look around—that will tell you why," Hedges said as he stared at her favorite resting place near the gurgling well.

Our National Forests

(From page 15)

for young and old alike. Take skiing, for instance . . . a winter use. Prior to World War II it didn't amount to much. By 1950 a total of 1,504,000 skiers used the national forests. Last year that number had grown to 4,706,000. This is a concrete example of how Americans interested in all sorts of outdoor recreation activities are discovering their national forests—not just in summer but during every season of the year. Viewed in this more dimensional manner, the forests take on a new magic and wonderment—come alive for all of us.

For one thing we must do, it seems to us, and the Service fully concurs, is to project these forests to our people in a more imaginative way that will make them truly come alive for all. In abandoning the "kitchen sink" approach to multiple use and the singling out and specifically defining those uses is a step in the right direction. As mentioned, a recently-released brochure on the

values of wilderness is one of the best and most understandable pieces of work the Forest Service has ever produced. Similar brochures on camping and picnicking, water, and winter sports are scheduled to appear in rapid fire order with all the other uses on the back burner waiting their turn.

Children Must Be Reached

But even this is not enough. Somehow, we must get this story to the teachers, to the schools, and, as a by-product, back to the parents of the nation. Workshops present one ideal way to do this, but even here new methods are indicated. Personally, we have been aware of this ever since a raft of boys started growing up in our home and increasingly we have become aware of, and on occasion downright irritated, by the fact that youngsters who can vividly describe the multiple stages of a rocket and can put a model of same together in a flat 30 minutes, haven't

the foggiest notion of what multiple use land management is and seemingly care less.

We simply must not permit these youngsters, keen as they are on science in an admittedly scientific age, to pass us by. The management of our land is a science, too. To appeal to them, we must adopt a more scientific approach, moreover, we must be prepared to provide meaningful answers couched in common sense, empirical terms that really pinpoint facts. For these children are nothing if not realists.

We found out about these things the hard way. Since this apparent lack of knowledge of one's own offspring seemed to be a reflection on someone, we endeavored to plug this gap in their education. We learned that it meant relatively little to them to tell them that the national forests contain 181 million acres, that they are managed by more than 10,000 professionals and technicians, and that they provide water, wood, forage, wildlife, minerals, and recreation for the public. Chagrined by our failure to project what the forests really are and what they mean to us, and about to give up, we happened to remember a comment by Harlean James who once told us, "Tell these city-weaned youngsters what an acre is. Show them what it is. We've all been off the farm so long that we've forgotten that our younger generation has no idea about what one acre is; let alone 180 million of them."

We tried it. We told them that roughly an acre is about the size of one city block or a football field—actually 208 feet square with 43,560 square feet in an acre. They perked up. Then we asked them if they would like to stride off an acre and they said they would. We went out to the playground. We showed them how to measure the length of their stride and then how to keep track of the distance by switching pebbles from one hand to the other—much as we did in the old days in New Guinea when had to make our own open and closed traverses for lack of maps. In addition to striding off their acre, the boys whooped into the business of making rough maps with an enthusiasm that was amazing.

"Imagine," said David, "181 million flat acres just like this playground."

"But they aren't flat," we told him. "Actually, they go from sea level up to 13,000 or more feet through a variety of growth zones.

Let me tell you what I saw in the Santa Fe National Forest in New Mexico. . . ."

Custodians of Tomorrow

We were in orbit. We were getting response. And all because a wise woman had remembered that few youngsters today know what an acre is. More of this hard sense wisdom is needed today in the projection of our forests, and their myriad values, to our boys and girls. These lands one day will be passed on to them for their continued stewardship as well as their use. Whether or not we succeed in reaching them—their innermost consciousness—will spell our success or our failure. The plain truth of it is we must reach them with all the scientific appeal these forests have; do it or risk failing in our management missions.

As a part of the never-ending task of seeking balance and harmony in all things, AFA pledges its support to this well-conceived informational program of the Forest Service to educate our people, including our young people, regarding these magnificent lands of many uses as well as the aims and purposes of those who manage them for us. Multiple use as practiced on the national forests is a balanced program, based on tested and workable management concepts. Here is a program that is in the public interest in the sense that it will well serve the American public as a whole and not just one segment of it. Finally, and most important of all, IT WORKS."

We welcome this symbol, and its message National Forests—Lands of Many Uses. May it take its rightful and deserved place with the honored shield of the great Service that will, with our help, make the potential of these lands a living and everlasting reality.

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Washington Lookout

(From page 7)

for small roadside parks and rest areas. County and local governments may obtain up to 640 acres a year. Most of the available lands are in the eleven western states and Alaska, with small areas being available in Minnesota, Louisiana, Florida, Arkansas, Alabama, and Wisconsin.

A PROPOSED REVISION OF THE PUBLIC LAND LAWS

sent to the Congress by the Department of the Interior would replace all or parts of some 30 laws dating back to 1877. Interior's proposal would allow direct sales to states and local governments of tracts up to 5,000 acres, competitive bid sales to private purchasers or developers of tracts up to 1,280 acres, and layout and subdivision by the government with direct sale or lease of individual sites and lots. Interior Secretary Udall anticipates that if the proposal is approved by Congress as much as 1 million acres of the 477-acre public lands might be sold in the next 10 years. Sales and development plans would be worked out in cooperation with state and local government agencies, and "nonconforming or substandard land uses would not be permitted."

A RECORD NUMBER OF SMALL WATERSHED PROJECTS

has been requested by President Kennedy. In a recent message to Congress, the President asked for approval of 20 projects in 15 states, the largest number ever requested at one time since the Small Watershed Act was passed in 1954. Estimated cost of the projects is \$44 million, with state and local agencies putting up about \$16 million, and the federal government paying for the rest. The President said that some 1400 communities have applied for assistance in the small watershed program, but only 303 projects have been authorized. That more applications may be expected is indicated by Senate passage of a bill to amend the act to permit project sponsorship by irrigation and reservoir companies and waters users' associations. House passage of the measure is expected.

AN INCREASE IN FUNDS FOR LAND PURCHASE IN

the Superior National Forest has been approved by the Senate. The new authorization would increase from \$2.5 million to \$4.5 million the amount to be appropriated for purchase of private land and improvements on the United States side of the Quetico-Superior international canoe country. The Senate-approved measure would also remove present limitations on the federal authority to condemn land and improvements, which prohibit the condemna-

tion of areas less than 500 acres if the owner has permanent structures thereon. Purpose of the legislation is to meet increased prices of presently available land in the areas and to aid in the acquisition of additional "hold-outs" before the prices go even higher. The AFA supports these Senate proposals.

SHIFTS OF FEDERAL LAND MANAGEMENT RESPONSIBILITIES

are forecast by Bureau of Land Management Director Karl S. Landstrom. Last month he told the Colorado Cattlemen's Association that he expects a "sorting out of lands administered by the Department of Agriculture and the Department of the Interior. Some lands now in national forests should perhaps be in the national parks, he said, and there are lands in the Department of the Interior that perhaps should be in national forests."

EXTENSION OF THE FEDERAL WATER POLLUTION

control act for another 5 years, into 1966, has been voted by the Senate. The bill, S. 120, also increases the authorization for state and interstate agencies for pollution control measures from the present \$3 million to \$5 million annually. Federal grants for construction of pollution control facilities would be increased in successive steps from the present \$50 million annually to \$100 million for 1966. Top limit for grants for any one project would be \$500,000, but not more than 30 per cent of the project cost. However, several communities, under the measure, could pool their interests in one project and thus obtain a maximum of federal funds. The bill also provides for federal assistance in the construction of research facilities for treatment of pollutants, and would expand federal authority in pollution control to all navigable waters (present law is limited to interstate streams) and would allow federal participation in intrastate cases when requested by the governor of the state. A similar bill has been reported by the House Committee on Public Works.

WASHINGTON NOTES: PRESIDENT KENNEDY ON June 21 gave his personal backing to complete all four legs of the George Washington Memorial Parkway in the District, Maryland and Virginia . . . Director of Natural Resources DeWitt Nelson, of California, last month cracked down on three wood producing firms in his state, charging they have violated the state's Forest Practice Act. Their timber operating permits were revoked.

A Swedish Editor Reports to His Readers

(From page 43)

crashed to the ground. The Americans gave an exultant cry like a red man's war whoop. But it was hard for some of us Swedes to see any occasion for exultation in the fact that a 2000-year-old veteran of the forest had fallen in order to satisfy the wood hunger of human beings.

This was succeeded by an exhibition of skidding with winches the huge logs which had been felled and bucked up in the vicinity. The timber was loaded with a typical American crane, an independent, self-operating machine, which with giant tongs lifted the logs weighing up to 30 tons. The empty trucks arrived with only trailers as loads. The crane lifted the trailer off the truck, which was then coupled to it and the loading began. It didn't take many logs for a full load. A load contains 16 thousand board feet of round timber. According to the information given, a load weighed from 50 to 60 tons—too much, of course, according to the regulations, for the public highways,

but the trucks rolled forward unconcernedly over the private roads. We were not able to determine whether any logs rolled off.

A research forest

The day was completed with some forestry on a special redwood experimental forest. This forest consisted of very steep terrain with good soil. Plants were counted on a cut-over area with the help of colored pegs stuck in the ground precisely as is done in Norrland (the northern part of Sweden). Research with fire had been carried out, and tests had been made with thinnings and selection cuttings in the virgin forest, here including also Douglasfir and hemlock, the latter a very much esteemed species. In all seriousness they wanted to cut the large trees and in this way prepare for regeneration. We Swedes questioned such an opening up of stands which had never been disturbed by an axe before. It certainly cannot be that the Americans will have to go through

the same misery that we did with diameter-limit cutting and disorderly selection before learning how to do sound felling.

Well, these are some glimpses of the trip in California, a land approximately as large as Sweden or 40 million hectares, of which 7 million are forest land. Approximately half of the forest is publicly owned and the other half is in private, mostly company, ownership. The redwood area is not much more than one-fourth of the total forest area. The annual growth of the entire forest growing stock in the state is about 3 cubic meters (ca. 105 cubic feet), forest measure, per hectare, which signifies a large surplus of virgin forest and that not all of the forest land is as fertile as where the redwood grows. The dry lands in the south pull down the average.

A description of the trip through Oregon and Washington will appear in the next number.

John Preston's Moose Story

SEVERAL months ago veteran forester John F. Preston wrote an article for AMERICAN FORESTS entitled "The Back Trail" in which he described a return visit to Missoula, Montana, and other Points West. At a luncheon in his honor at Missoula, he related that he told his favorite Moose Story and that, moreover, none of the foresters present could guess the answer. Neither could readers of the magazine, for whom the story was not spelled out in the first place, and who now want a chance to answer it themselves. Accordingly, Mr. Preston's Moose Story is published here and the answer is found at the end upside down. The story:

"Back in 1934, a short time before it became a national park, I found myself on Isle Royale, examining a timber property. I was a pulpwood forester in those days, and this property was supposed to contain a large quantity of spruce and balsam timber suitable for pulpwood. The pulpwood proved to be a disappointment, but that is another story. It is mentioned here merely as an introduction to my Moose Story. At that time, the moose population on the island

was large—too large, from all reports, either for the good of the moose or of the forest.

"Perhaps this fact has a bearing on my story. Some of the moose were in bad shape—near starving—but that was not true of all—some were fine beautiful animals, and it is about one of these that I tell this story. But I warn you that this is a tricky story—all is not quite—not quite—as I picture it. But I also tell you; there is not one word of untruth in it; it is absolutely true in every respect.

"I remember one beautiful, healthy bull moose that we encountered one day near the lake shore. Our party, that day, was composed of two cruisers and one compassman, and I was one of the three.

"This bull moose stood there among the popple trees, alone. The rest of the herd had taken flight as we approached. We heard them now in the distance. Our lone moose stood quite still, seemingly interested, but not disturbed, by our approach. At first, we watched him at a respectful distance, expecting him to take flight momentarily. We admired his wild graceful appearance,

his smooth, almost perfect coat; many of the moose we had seen thus far showed signs of hard use—many worn-bare spots were evident in their great coats.

"We gradually moved closer, encouraged by his seemingly friendly and unafraid attitude; until—we stood beside him; laid hands on him; stroked his neck and head, as we would a gentle and lovely horse. 'Well,' we said, 'this will be something to tell about when we get home; only, nobody will believe us; nobody, that is, who has seen, in the wilds, a mighty bull moose.' When we turned to go to our boat, the moose followed us to the water. He stood on the shore, watching us as we moved away. We waved farewell.

"That concludes my moose story, and I insist, it is absolutely true in every detail. I might add that, at that time, there was only one family living on the island at the extreme east end of the island, at least 30 miles from the point where the incident of my story occurred.

"Now who can say what it was that I failed to mention?"

only two days old.
The answer: the lone bull moose was

Replies on Fred Metz's Trees

One forester gives us the hotfoot for inviting public comment on the plight of Mr. Metz, the Ohio tree planter who lost some of his trees to a pipeline firm. But three others air their views and offer us a number of valuable suggestions.

EDITOR:

Regarding the article concerning Mr. Metz's pine on page 42 of the April, 1961, issue:

1. It would appear that Mr. Metz paid a very handsome price for his white pine seedlings in 1942. \$120.00/M for seedlings would seem rather steep, but who should know better than the man who paid for them?

2. It is doubtful whether a court would uphold an estimate of some \$61.00 per tree when the tree at maturity would scarcely approach that in value.

3. Granted, the cost to restore the plantation to its original condition might be as stated, I, nevertheless, feel a court would place a value on the trees removed based on no more than their expected harvest value plus an "intangible" amount to cover aesthetic value lost, future management problems, etc.

4. Other investments in the farm itself would apparently not be jeopardized by the loss of the pine, hence should have no bearing on the settlement for the trees. In watershed or wind erosion situations, then possibly the total farm could be effected.

Richard A. Yankee
Registered Forester
543 Eighth Street
Manistee, Michigan

EDITOR:

Since the trees have been cut on 1/5 of an acre, this portion is in the same condition it was in before planting in 1942. He has the wood that was cut and this should cover the interest on this additional investment. He still has title to the land and this portion can be planted in game food and added to his game refuge.

His damage would be the additional investment in the plantation, the cost of protection and supervision and the cost of the court action. This would be as follows:

130 trees @ .12 each	\$15.60
Labor in planting	5.00
Supervision & protection	18.00
Total—1/5 acre	\$38.60

The actual cost of the court action could not be determined until the case was actually settled by the court.

G. E. Jackson
Consulting Forester
Washington, North Carolina

EDITOR:

You asked for my view on the matter, based on Mr. Metz wanting \$65.00 per tree. The 1/5 acre price would be \$7,345.00, one acre \$36,725.00, one forty \$1,469,000.00. Not

bad! He can buy the whole upper for that.

I plant trees—from six to ten thousand each year. I buy ten thousand for what he paid for one thousand. His trees must be dipped in gold. I plant from 650 to 700 trees per acre, get about 80% growth, figure these trees first year at 10¢ per, and each year after at 10¢ per tree for growth. I am not far off, based at stumpage price.

If Mr. Metz planted 650 trees per acre, he should in the near future go through these trees and thin them. When he sold these for stumpage, it would give him a good idea what his damage was. If I were Mr. Metz, I would be glad to settle for \$500.00. This way he would be getting nearly \$125.00 per acre, per year, based on twenty years. I would like to do that with my thirty-five forties.

This is the first time I have ever written to you folks. At this time I would like to tell you, if you are ever near Seney in summer do drive in, as I sure would like to take you around our place. I would like to show you what I am doing with an old CUT and RUN timber farm. The place has lost money every year, but I am having fun. My only beef is taxes. Eighteen years ago they were \$91.00; this year, \$710.00. We are at the tree farm from May to December. As we are three miles off the main road, we are unable to go in and out in winter. The balance of time we are here at Millersburg, Ind.

Roy E. Rogers
Rogers Tree Farms
Millersburg, Indiana

EDITOR:

In references made to the AMERICAN FORESTS of April, 1961 on page 42, box article, "What Are Metz's Trees Worth?":—The question is what financial award is the owner entitled to seek if forced to sue for the recovery of damages?

The prime answer in our judgment to Mr. Metz's case is to secure the professional services of a consulting forester; that is if he wants the truth, the facts and professional representation—and not a fanfare of publicity and attention.

The association in requesting general public evaluations concerning a biological resource, based on cursory facts does a disservice to the profession and the cause of forestry.

Only a quack would prescribe treatment of a patient or give counsel based on broad statements. The American Forestry Association should certainly use more discretion than encouraging a general public evaluation not based on a scientist's total measurement and observation. This policy is not in keeping with the previous studies and standards of the association.

Harry E. Murphy
Vice-President
Southern Timber Management Service
Birmingham, Alabama

Forest Forum

(From page 2)

entitled "Sane Use of Herbicides." Mr. Mason made reference to some of the problems encountered in handling 2,4-D and 2,4,5-T materials.

Our company has been in the herbicide business a good many years and has been plagued with the same problems in the use of the two compounds mentioned above. Last year we developed a new method of applying these products which eliminates the old drift hazards from both aerial and ground application. We are enclosing two copies of a reprint from *Chemical and Engineering News* about our Stull Process. Inasmuch as we do not have Mr. Mason's mailing address we hope that you will forward a copy to him.

David P. Peteraen
Vice President
Stull's Chemicals
San Antonio, Texas

Trapping Water for Trees

EDITOR:

I sure liked the March issue of AMERICAN FORESTS with all the news from Washington and especially that article by Nicholas T. Mirov, "The Face of the Country." He tells about seeing our shelterbelts here in Nebraska as he is high in the sky and he is right, it is certainly an inspiring sight.

During the Great Depression, Nebraska planted millions of trees. In many places where the trees could get moisture, they survived. In many places where they could not get moisture, they perished. Generally, death occurred the second or third year after the plantings and we tree planters must learn how to water trees out here if they are to survive and grow. We can do this by trapping water runoff and diverting the water to our fields, shelterbelts, and groves of trees. There is plenty of water for this purpose but we farmers must learn to help ourselves to this water.

In 1960 there was enough water that ran out of Nebraska to water everything that needs water and as soon as we learn how to fill our ravines, creeks and canyons with this wasted water, we will have a supply of water for every use. Rainfall and snow melt come at a time in the season when we have no need for water—the need for water comes in July, August, and September. These are the months there is no rainfall and these are the months our creeks and canyons should be full of water. Then we can move this water out where it will make a profit.

Wherever water runs on the surface, it can be trapped and impounded for future use. In many places this water can be drained out through shelterbelts in an open ditch, and where there is hilly land, underground tile can be used to move water. These tile conduits can be run around on the hillside, under canyons, roads or other obstructions, just so the tile where the water enters is higher than any other part of the underground tile line. Water will follow this line of tiles for miles and during every shower of rain, these tile conduits will be flooded with water which will escape from the tile right into the root zone of the trees. This would involve no loss by evaporation, no expense of any kind; it's all free. Wasted water will be turned into profit and all the tree plantings will survive without any time or labor by the planter.

We have interested the Department of Agriculture, Nebraska, in this method of watering trees, and when the results are known, this method of using wasted water will spread to other western states. This is really a desert. You can drive for miles without seeing a single tree; where there should be acres of trees there are only bunches of scrubs, all suffering for water. We have several thousand trees that have been watered since they were planted seven years ago and our trees are several times larger than trees that are 30 and 40 years old. You can never water trees with water that has passed. Where there is no water there is no life.

Martin J. Kelly
P.O. Box 815
Grand Island, Neb.

Catch 'em and Cook 'em

EDITOR:

I want to thank AMERICAN FORESTS for its nice review of "Catch 'em and Cook 'em." I especially like the reviewer's reference urging purchase of my book rather than eating in ten good restaurants! I love other people's cooking. I've had fun with the book and I think it will do well with the help of such good reviewers.

Bunny Day
45 East End Avenue
New York 28, N. Y.

Too Far Too Fast?

EDITOR:

Congratulations on a very fine editorial in the March AMERICAN FORESTS. A very understandable review of the much discussed Wilderness bill. Personally I have not yet been satisfied by any of the bills that have appeared and I would like a copy of Senator Anderson's version.

I have horsebacked through most of the larger wilderness areas in Idaho, Colorado, Wyoming, Utah, and Montana, to observe the areas along with others whose interest is the same as mine. From my observation, the tendency seems to be to include too many small areas. I have said jokingly, but with what might be a point well taken, that when the wilderness people see three trees in a hollow they want to make a wilderness out of it.

Don't misunderstand my feeling for wilderness preservation. I think everything possible should be done very soon to keep them as near inviolate as possible, but it looks to me that much opposition has been built up by trying to reach too far with one stride. Quick decisions should be made on which are really the most important ones and steps taken for their immediate protection. . . .

M. T. Messelt
12 Third Street North
Great Falls, Montana

"Keep Britain Tidy"

Planning and Civic Comment reports that England at Easter embarked on its own equivalent of "Keep America Clean" with its "Keep Britain Tidy" campaign. Which reminds us that Australia also had a fine fire prevention program under the slogan "Remember the Ember."

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Signs of Bossiness?

EDITOR:

If these Senators are going to sound off and get quoted in hearings, they ought to be willing to answer the queries of us common voters. I wrote Senator Anderson regarding the Wilderness Bill and he might as well have thrown my inquiry in the waste basket. Enclosed is the form note I received in reply.

I hope you and your conservative foresters will continue to do the very best things for all of the people all of the time.

If you study Senator Anderson's picture in your magazine carefully you can find plenty of signs of bossiness, in my estimation. Please note also that *none* of the members of his committee are from the South, East or Middle West.

Wright A. Gardner
Pineview Farm
P.O. Box 751
Auburn, Alabama

Parks Roundup

EDITOR:

We were much pleased to note the good news roundup of park developments and park projects which appeared in the February issue of AMERICAN FORESTS. We appreciate your keeping your readership posted on such important conservation developments.

We still hope that the scenic and historic old Chesapeake and Ohio Canal can become a full-fledged national historical park. We did not, frankly, seek the national monument designation recently given the canal property. Although this gives the canal official status as a unit of the National Park System, the canal lands are too meager to be developed into an adequate park and recreation resource. Only through additional land acquisition, authorized by Congress, can the public realize the great park and recreation potential of this Potomac Valley area.

To reassure all who have feared that a park might in some way interfere with ef-

forts to meet water needs in the Potomac Valley, President Eisenhower's proclamation, following the pattern of legislation considered in the 86th Congress, specified:

Nothing in this proclamation is intended to prejudice the use of the Chesapeake and Ohio Canal National Monument for such works as the Congress may hereafter authorize for municipal and domestic water supply, navigation, flood control, drainage, recreation, or other beneficial purposes.

Bills recently introduced in the 87th Congress by Senator Beall and Representative Mathias of Maryland contain a similar provision. Congress, of course, has power to make these decisions even without this expression, to which the Service has no objection.

Having noted Chief Forester Pomeroy's suggestion that residential areas should be included to the extent that it is practicable to do so for the Cape Cod National Seashore proposal, we wish to assure him that, through careful planning studies, we have tried to do this in a manner best suited to reconcile national and local interests on the Cape.

In making the field study leading up to our Cape Cod National Seashore proposal, and in drawing boundaries for such an area, we carefully excluded all of the community centers of the six towns affected by the proposal, together with room for them to grow. Senators Saltonstall and Smith of Massachusetts have made additional exclusions in a new Cape Cod National Seashore bill recently introduced in the 87th Congress.

Moreover, under terms of legislation considered in the last Congress and pending again in this Congress, all established homeowners who adhere to local zoning standards approved by the Secretary of the Interior will be able to enjoy their homes indefinitely, since the Secretary's power of condemnation against that property for park purposes would be suspended. Property owners wishing to sell to the Government but wishing also to retain the enjoyment of their property for a continued period of time, could select arrangements under which they would retain a life tenancy or tenancy for 25 years, according to their choice.

With the thickly settled residential areas excluded from the seashore and with the continuance of residences elsewhere within the park thus assured to established homeowners, we believe that the Cape Cod National Seashore legislation now pending in the Congress fully meets the recommendations expressed by Mr. Pomeroy.

Our thanks again to you for a helpful and informative article.

E. T. Scoyen
Acting Director
National Park Service
U. S. Department of the Interior
Washington 25, D. C.

Polluted Government

EDITOR:

REFERENCE — "Potomac Prospects" in June issue AMERICAN FORESTS: The Potomac River is in a mess. It is polluted and full of corruption. The government is in a mess. It is polluted with bureaucrats. This makes our government somewhat like the Potomac. Why make a bigger mess out of our government? Our government is more important than the Potomac.

Thomas G. Clark
Consulting Forester
P.O. Box 1046
Morgantown, W. Va.

Golden Anniversary at Syracuse

SEVERAL hundred alumni participated in the three days of festivities, April 12-14, which marked the 50th anniversary of the State University College of Forestry at Syracuse University. This golden anniversary celebration included an alumni reunion, open houses, technical symposia, a banquet, a luncheon, and an academic convocation, at which honorary doctorate degrees were conferred upon six world forestry leaders by the university.

Recipients of the degrees, and their sponsors, were:

Eino Armas Saari, chancellor of the School of Social Sciences at Tampere, Finland; Doctor of Science; sponsored by Dean Shirley of the College of Forestry.

Howard Morgan, vice president of the Weyerhaeuser Co., Tacoma, Wash.; Doctor of Science; presented by Frederic W. O'Neil, professor of pulp and paper technology and chairman of the department.

Irving W. Bailey, emeritus professor of plant anatomy, Harvard University, Cambridge, Mass.; Doctor of Science; presented by Josiah L. Lowe, professor of forest botany.

Ellwood S. Harrar, dean of the School of Forestry at Duke University, Durham, N. C.; Doctor of Science; presented by Eric A. Anderson, professor of wood technology and chairman of the department.

Richard E. McArdle, chief of the U. S. Forest Service, Washington, D. C.; Doctor of Laws; presented by Frank C. Ash of Fulton, president of the College of Forestry's Board of Trustees.

Laurence S. Rockefeller, chairman of the board of Rockefeller Brothers, Inc., New York; Doctor of Laws, presented by Vice President for Public Affairs Kenneth G. Bartlett.

Another highlight of the anniversary celebration was the presentation of 50th anniversary distinguished service medals to seven leaders in forestry and conservation. The citations, the first in the college's history, were awarded to: Dr. Irvine T. Haig, retired member of the research staff of the U. S. Forest Service; George A. Hunt, former director of the U. S. Forest Products Laboratory at Madison, Wisconsin; Dr. Frank H. Kaufert, director of the University of Minnesota's School of Forestry; Dr. Herman F. Mark, director of the Polymer Research Institute of Polytechnic Institute of Brooklyn; Dr. Richard E. McArdle, chief of the U. S. Forest Service; Dr. Eino A. Saari, chancellor of the School of Social Sciences, University of Helsinki; and, Dr. Conrad L. Wirth, director of the National Park Service.

Opposes "Multiple Use"

EDITOR:

Regretfully I decline renewal of my membership. My reason for associating with The American Forestry Association has been because of deep concern for AMERICAN FORESTS. All indications point to the AFA as the great exponent of the "multiple-use-it-up" programs. I am sure that you realize that this "wise-use" shibboleth is not new. If you would walk about the barren landscapes of Greece, Spain, Egypt, or Israel and ask 100 unselected natives whether they believed that their resources had been used wisely, probably 98 per cent of them would be insulted at the question, while maybe one would be willing to question the use. "Wise use" has been practiced in these countries for thousands of years and look at them.

Your editorial, "Fire Weather Ahead," was a fine piece of writing. But will it help to stem the pressures made upon local Forest Service administrators by the "rod and gun boys," who demand entrance into tinder dry and explosive priceless watersheds? The great majority of interested citizens could not combat the pressures here. We now have a cattle-guard in place of a locked gate for seasonal fireclosures. It stands wide open now and we hold our breath in anticipation of another 68,000-acre holocaust like the Stewart Burn, where a gunner set off a blaze that hunting license revenues will not compensate in thirty years. Certainly we know that lightning also causes fires and that we need more research but "people-dangers" are the ones that we must be able to control, if we have sense.

Your "first things first" remark and the terse reply of the member from Boston about the "munitions makers poking their snouts into the national parks," combined with Mr. Conrad Wirth's trial-balloon-proposal for some hunting therein, brings to mind the brochure produced by a subsidiary of the National Education Association. In this "Outdoor Education" boondoggle, Mr. Wirth is listed on the Advisory Committee with the officers of the Sporting Arms and Ammunition Institute and the Fishing Tackle Manufacturers Association, who, incidentally, finance the boondoggle. We do not know if the National Park Service contributes. This is just another of the "business-uber-alles" schemes that is a mirror-image of the multiple use program. God help America—let's save some of it!

William Vogt wisely wrote, "The value of wild creatures in maintaining a balanced, healthy ecology in which man can thrive is unquestionably far greater than any figure that has been assigned to their direct exploitation." We note that your magazine looks more and more like a fish and game journal every day. Many members don't like it!

Henry M. Weber, M.D.
Commander Med. Corps, USN-Ret.
Indio, California

Wasted Trees

First let me say how much I appreciate the worthiness of the association for the wonderful work it does for the preservation of our forests and our countryside. I have been a member for some years now, and I am very proud of this honor. And I do enjoy your very interesting publication.

However, with reference to the aluminum tree taking the place of the live, green tree, I cannot say that I will be sorry not to witness the sight of hundreds of trees laying around, unsold, on Christmas Day and some days after Christmas, trees no



Weeden Succeeds Huber

NORMAN P. WEEDEN (left), supervisor of the Coronado National Forest at Tucson, Ariz., has succeeded William W. Huber (right) as Director of the Smokey Bear Forest Fire Prevention Campaign. Mr. Huber becomes director of the Information and Education Work for the Forest Service in 11 southern states with headquarters at Atlanta, Ga. The Smokey Bear Campaign is sponsored by the state foresters, the Forest Service and the Advertising Council.

A highly popular director of the fire prevention program, Huber's term saw the number of forest fires drop to new low records. Under his direction the Junior Forest Rangers grew to three and a half million. A native of New Mexico, Mr. Weeden is a former Marine and has also worked in the Soil Conservation Service and the Bureau of Land Management. AFA members will remember him as the chairman who helped make the Tucson annual meeting of the AFA an outstanding success several years ago.

longer wanted, laying in the dirt of the streets, awaiting the arrival of the garbage truck. It always saddens me deeply. And it gladdens my heart to think that in the future these brave trees will have a more worthy, useful fate. Let the aluminum tree replace the old fashioned tree. Is not the aluminum tree the emblem of the Christmas spirit of today? For too many, at any rate.

Congratulations and heartfelt thanks to Reforestation Officer D. A. Skeates and Forest Ranger George Marek who risked their lives to save a helpless moose from a sad and cruel death. What an uplift for one's spirit!

Marguerite Carlsen
512 Mackay Avenue
Oradell, New Jersey

Keep America Clean

EDITOR:

Trees felled by the thousands from hurricanes of the past five years still lie in the forests of the Northeast, perhaps elsewhere. A worthwhile project for government

would be the clearing up of these forests, even where privately owned, for:

- (1) An increase in termite, carpenter ant, and other insect life may result. When this food supply is exhausted, a maximum wood-destroying insect population will have been achieved. Will they search out home property for food supply?
- (2) Even if cut up for fire wood, there is considerable economic value in this wood.
- (3) Removal would beautify our forests. Good housekeeping should not exclude our forests.

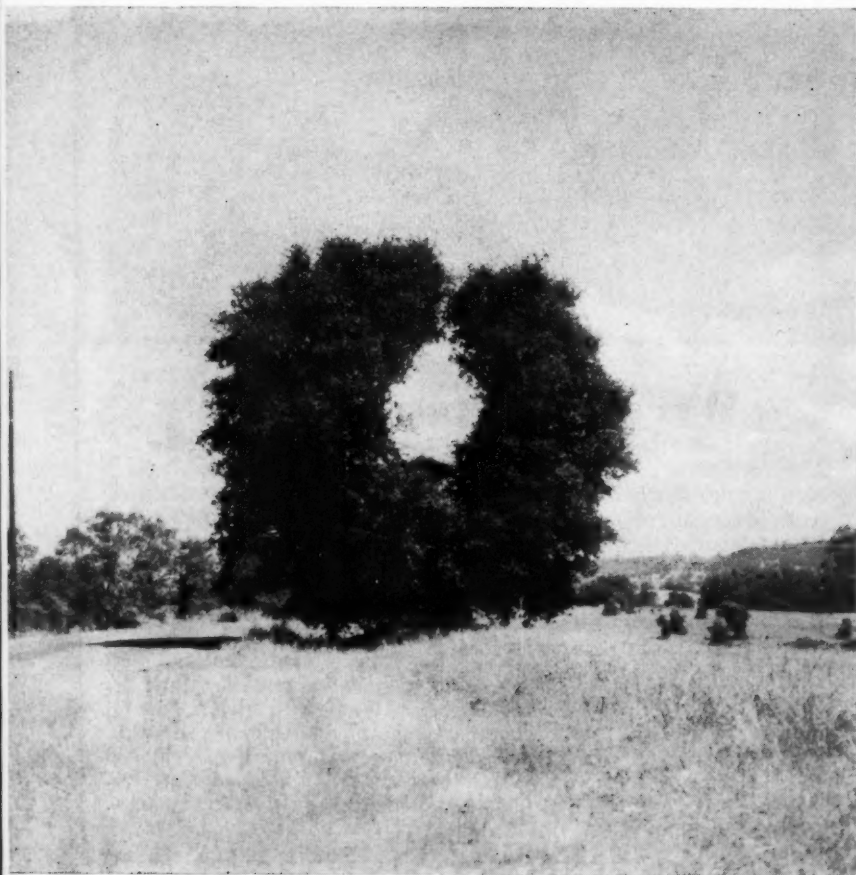
As I watched these thousands of hurricane-felled trees from a plane recently, I wondered why this would not be worthy of recommendation in this unemployment program for distressed areas. Much of Pennsylvania, for example, is littered with these trees.

What do you think?

Thomas J. McMahon
McMahon Brothers
Box 261
Tenaflly, N. J.

Feature Photos of the Month

Photos used on this page will be of unusual rather than esthetic qualities and subject matter will be restricted to scenes, events, objects or persons related to the use, enjoyment or unique aspects of our renewable natural resources. For each picture selected, AMERICAN FORESTS will pay \$10



Interior live oaks are very common sights in the Sierra Foothills of the Motherlode but they do not usually assume shape of a huge doughnut as does this one on the road from Valley Springs to Pardee Reservoir. The tree naturally grew in this odd form

Photo submitted by Holden Hayden, Alameda, California



Josiah H. Child, of Seascapes House, Provincetown, Mass., liked the Morse and Burch stories last month on Point Reyes and Cape Cod respectively but thought the latter should have mentioned the pending legislation to make the Cape dunes area a national seashore park. While Point Reyes deserves seashore park status, Mr. Child believes the Cape Cod dunes area is superior to anything in the nation. To prove his point, he sent this photo by Gretchen Everbach

LET'S GO

Trail Riding



TRAIL RIDERS OF THE WILDERNESS

1961 Expedition Schedule

HIGH UINTAS WILDERNESS, UTAH

JULY 6 TO JULY 16
\$235 from Vernal, Utah
Party limited to 25

BOB MARSHALL WILDERNESS, MONTANA

JULY 7 TO JULY 18
\$250 from Missoula, Montana
Party limited to 20

QUETICO-SUPERIOR WILDERNESS, CANADA (Canoe Trip)

JULY 11 TO JULY 20
\$215 from Ely, Minnesota
Party limited to 18

SAN JUAN WILDERNESS, COLORADO

JULY 17 TO JULY 27; JULY 31 TO AUGUST 10
\$235 from Durango, Colorado
Parties limited to 25

WIND RIVER MOUNTAINS, BRIDGER WILDERNESS, WYOMING

JULY 17 TO JULY 28; AUGUST 8 TO AUGUST 19
\$250 from Pinedale, Wyoming
Parties limited to 25

MAROON BELLS-SNOWMASS, COLORADO

JULY 25 AUGUST 3; AUGUST 4 TO AUGUST 13
\$230 from Glenwood Springs, Colorado
Parties limited to 25

SALMON-TRINITY ALPS WILDERNESS, CALIFORNIA

JULY 31 TO AUGUST 9
\$250 from Redding, California
Party limited to 20

YELLOWSTONE NATIONAL PARK, WYOMING

AUGUST 7 TO AUGUST 18
\$250 from Moran, Wyoming
Party limited to 25

TETON WILDERNESS, WYOMING

AUGUST 21 TO SEPTEMBER 1
\$250 from Moran, Wyoming
Party limited to 25

MT. WHITNEY-HIGH SIERRA, CALIFORNIA

AUGUST 23 TO SEPTEMBER 1
\$250 from Lone Pine, California
Party limited to 20

PECOS WILDERNESS, NEW MEXICO

SEPTEMBER 5 TO SEPTEMBER 15
\$235 from Santa Fe, New Mexico
Party limited to 25

Write or wire for detailed information, itineraries and reservations

919 Seventeenth Street, N.W.
Washington 6, D. C.

THE
AMERICAN FORESTRY
ASSOCIATION



There's more to a forest than meets the skies

Treat yourself to a tranquilizer from nature's medicine chest. Tumbling water and tree-filtered sunlight are tonics for workaday tensions. When you seek pleasure as a panacea you can hardly be expected to think of pulpwood. But somebody has to think of both — somebody like Scott.

Scott makes pleasure compatible with tree farming wherever possible on its nearly 2,000,000 acres of tree crop lands. Here a mother can escape household chores and relax with her children. Dad's downstream — fishing. When he returns there will be lunch on the rocks under the forest canopy.

A forest is nature's wood factory — the only factory where public pleasure and private production can coexist. The compatibility is not automatic. Scott fosters it to share with the public the outstanding recreational opportunities of forests while they grow America's best known paper products.



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